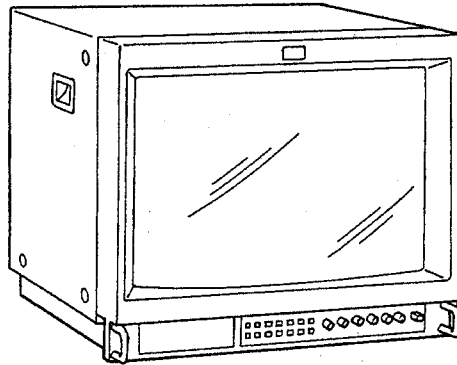


# PVM-2054QM

## SERVICE MANUAL

*AEP Model*  
Chassis No. SCC-G62A-A



### SPECIFICATIONS

#### Video signal

Color system	PAL, SECAM, NTSC, NTSC4.43
Resolution	600 TV lines
Aperture correction	0dB - +6.0dB
Frequency response	LINE 9.0MHz (-3 dB) RGB 10.0 MHz (-3 dB)
Synchronization	AFC time constant 1.0 msec.

#### Picture performance

Normal scan	7% over scan of CRT effective screen area
Underscan	5% underscan of CRT effective screen area
H. linearity	Less than 8.0% (typical)
V. linearity	Less than 7.0% (typical)
Convergence	Central area: 0.7 mm (typical) Peripheral area: 1.3 mm (typical)
Raster size stability	H: 1.0%, V: 1.5%
High voltage regulation	4.0%
CRT	SMPTE-C phosphor
Color temperature	6,500K/9,300K (+8MPCD), selectable USER (3200K-10000K, factory setting is 6500K)

#### Inputs and Outputs

Inputs	Y/C IN: 4-pin mini DIN connector (See the pin assignment on the next page.) VIDEO IN: BNC connector
--------	---

1Vp-p  $\pm 6$ dB, sync negative  
AUDIO IN: phono jack, -5 dBs, more than 47k ohms  
R/R-Y, G/Y, B/B-Y IN: BNC connector  
R, G, B channels: 0.7 Vp-p,  $\pm 6$ dB  
Sync on green: 0.3 Vp-p, negative, 75 ohms terminated  
R-Y, B-Y channels: 0.7 Vp-p,  $\pm 6$  dB  
Y channel: 0.7 Vp-p,  $\pm 6$ dB  
(Standard color bar signal of 75% chrominance)  
EXT SYNC IN: BNC connector  
Composite sync 4 Vp-p,  $\pm 6$  dB, negative

#### Loop-through outputs

Y/C OUT: 4-pin mini DIN connector  
VIDEO OUT: BNC connector, 75 ohms terminated  
AUDIO OUT: phono jack  
R/R-Y, G/Y, B/B-Y OUT: BNC connector, 75 ohms terminated  
EXT SYNC OUT: BNC connector, 75 ohms terminated  
REMOTE: 20-pin connector (See the pin assignment on the next page.)  
Output level 0.8 W

Remote input

Speaker output



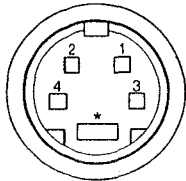
TRINITRON® COLOR VIDEO MONITOR  
**SONY®**

General

Power consumption    Approx. 130 Wh (incl. SDI)  
                              Approx. 120 Wh (without. SDI)  
Power requirements    100 – 240 V AC, 50/60 Hz  
Operating temperature range  
                              0 – 35 °C  
Storage temperature range  
                              –10 – +40 °C  
Humidity                0 – 90%  
Dimensions            Approx. 450 × 457.5 × 503 mm  
                              (w/h/d)  
                              (17 3/4 × 18 1/8 × 19 7/8 inches)  
                              not incl. projecting parts and controls  
Mass                    Approx. 30 kg (66 lb 2 oz)  
Accessory supplied    AC power cord (1)  
                              AC plug holder (1)  
                              Tally label (1)  
                              Cable with a 20-pin connector (1)

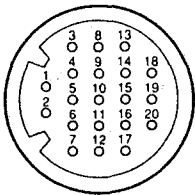
Pin assignment

Y/C IN connector (4-pin mini DIN)



Pin No.	Signal	Description
1	Y-input	1 Vp-p, sync negative, 75 ohms
2	CHROMA sub-carrier-input	300 mVp-p, burst Delay time between Y and C: within 0±100 nsec., 75 ohms
3	GND for Y-input	GND
4	GND for CHROMA-input	GND

REMOTE connector (20-pin)



Pin No.	Signal	Wire color
1	Blue only	Brown
2	H/V DELAY	Red
3	MAIN/SUB*	Orange
4	EXT SYNC	Yellow
5	DEGAUSS	Green
6	R ch ON/OFF*	Blue
7	TALLY	Purple
8	LINE B	Grey
9	GND	White
10	GND	Black
11	GND	Pink
12	GND	Light Blue
13	LINE A	Spiral Orange
14	LINE/RGB	Spiral Yellow
15	GND	Spiral Green
16	L ch ON/OFF*	Spiral Blue
17	REMOTE	Spiral Purple
18	LINE C	Spiral Grey
19	UNDER SCAN	Spiral Pink
20	16:9	Spiral Light Blue

(\* For digital audio control)

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## (CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

## WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

## SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

# Features

### HR (High Resolution) Trinitron picture tube

HR Trinitron tube provides a high resolution picture. Horizontal resolution is more than 600 (PVM-1354Q/1954Q) or 450 (PVM-1351Q) TV lines at the center of the picture.

### Four color systems available

The monitor can display PAL, SECAM, NTSC and NTSC<sub>4.43</sub>\* signals. The appropriate color system is selected automatically.

\* A signal of NTSC<sub>4.43</sub> is used for playing back NTSC recorded video cassettes with a video tape recorder/player especially designed for use with this system.

### Blue only mode

In the blue only mode, an apparent monochrome display is obtained with all three cathodes driven with a blue signal. This facilitates color saturation and phase adjustments and observation of VCR noise.

### Analog RGB/component input connectors

Analog RGB or component (Y, R-Y and B-Y) signals from video equipment can be input through these connectors.

### Y/C input connectors

The video signal, split into the chrominance signal (C) and the luminance signal (Y), can be input through this connector, eliminating the interference between the two signals, which tends to occur in a composite video signal, assuring video quality.

### Beam current feedback circuit

The built-in beam current feedback circuit assures stable white balance.

### Comb filter

When NTSC video signals are received, a comb filter activates to increase the resolution, resulting in fine picture detail without color spill or color noise.

### Automatic termination (connector with mark only)

The input connector is terminated at 75 ohms inside when no cable is connected to the loop-through output connectors. When a cable is connected to an output connector, the 75-ohms termination is automatically released.

### Underscan mode

The signal normally scanned outside of the screen can be monitored in the underscan mode.

#### Note

When the monitor is in the underscan mode, the dark RGB scanning lines may appear on the top edge of the screen. These are caused by an internal test signal, rather than the input signal.

### Horizontal/vertical delay mode

The horizontal and vertical sync signals can be checked simultaneously in the H/V delay mode.

### External sync input

When the EXT SYNC selector is in the on position, the monitor can be operated on the sync signal supplied from an external sync generator.

### Auto/manual degaussing

Degaussing of the screen can be performed automatically when the power is turned on, or manually by pressing the DEGAUSS button.

### On-screen menus

You can set color temperature, CHROMA SET UP, and other settings by using the on-screen menus.

### Five menu languages

You can select the menu language from among the five languages on the menu.

### EIA standard 19-inch rack mounting

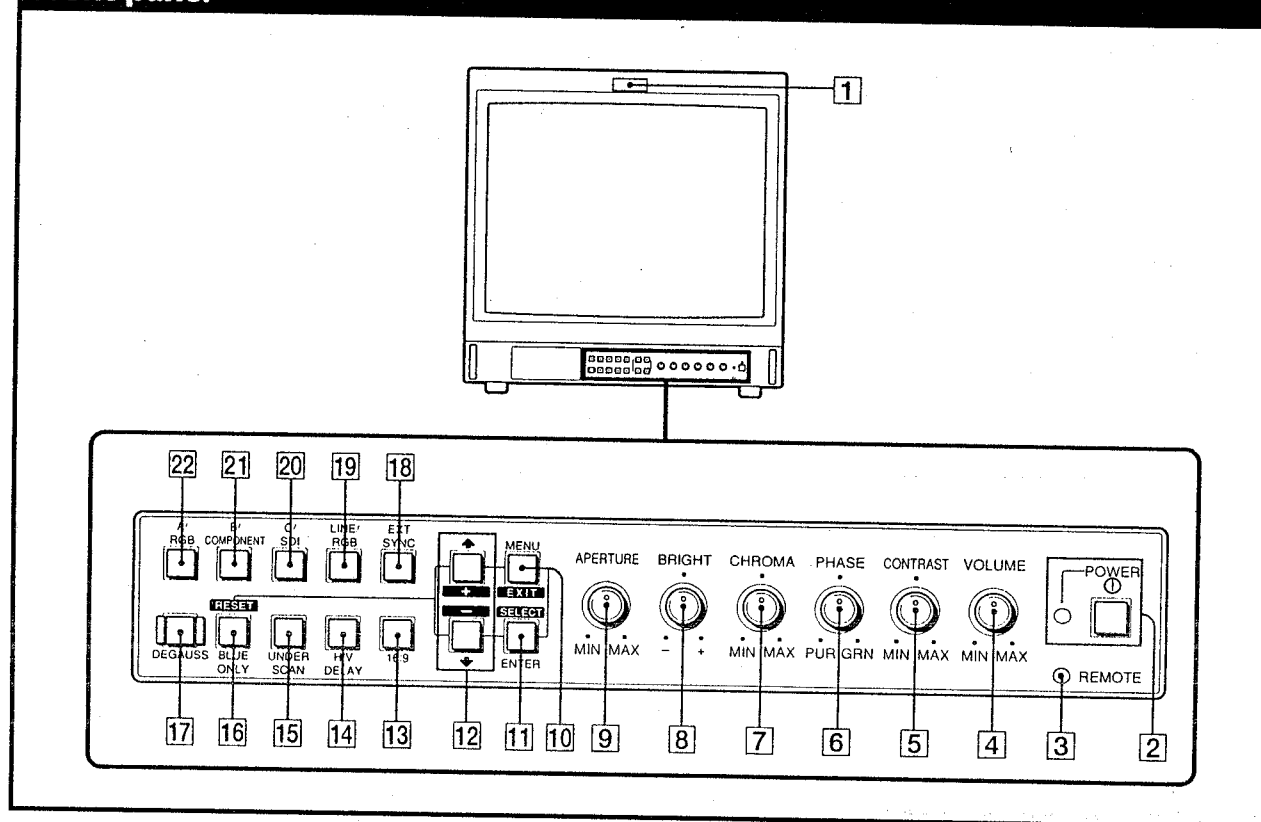
By using an MB-502B (for PVM-1354Q/1351Q) or SLR-103 (for PVM-1954Q) mounting bracket (not supplied), the monitor can be mounted in an EIA standard 19-inch rack. For details on mounting, see the instruction manual of the mounting bracket kit.

### SDI (Serial Digital Interface) kit

By using SDI kit, the monitor can display SMPTE 259M 4:2:2 serial digital signal from a digital VTR. (ex. Sony 4:2:2 VTR)  
SDI kit: 4:2:2 digital video board  
Digital audio board

# Location and function of parts and controls

## Front panel



### 1 Tally lamp

Lights up when the video camera connected to this monitor is selected, indicating that the picture is being recorded.

### 2 POWER switch and indicator

Depress to turn the monitor on. The indicator will light up in green.

### 3 REMOTE indicator

Lights up when you set USER PRESET to ON in the menu, or when you connect a supplied cable to REMOTE connector (No. 17 pin is ground). The controls on the front panel do not work when this indicator lights up.

### 4 VOLUME control

Turn this control clockwise or counterclockwise to obtain the desired volume.

### 5 CONTRAST control

Turn clockwise to make the contrast higher and counterclockwise to make it lower.

### 6 PHASE control

This control is effective only for the NTSC<sub>3.58</sub> and NTSC<sub>4.43</sub> color systems. Turn clockwise to make the skin tones greenish and counterclockwise to make them purplish.

### 7 CHROMA control

Turn clockwise to make the color intensity higher and counterclockwise to make it lower.

### 8 BRIGHT (brightness) control

Turn clockwise for more brightness and counterclockwise for less.

### 9 APERTURE control

Turn clockwise for more sharpness and counterclockwise for less.

### Note

The APERTURE, CHROMA, PHASE control settings have no effect on the pictures of RGB signals.

### 10 MENU (EXIT) button

Press to make the menu appear. Press to return to the previous screen in the menu.

### 11 ENTER (SELECT) button

Press to decide a selected item in the menu.

### 12 ↑ (+)/ ↓ (-) buttons

Press to move the cursor (▶) or adjust selected value in the menu.



**13 16:9 selector**

Press (light on) for the signal of 16:9 picture.

**14 H/V DELAY selector**

Press (light on) to observe the horizontal and vertical sync signals at the same time.  
The horizontal sync signal is displayed in the left quarter of the screen; the vertical sync signal is displayed near the center of the screen.

**15 UNDER SCAN selector**

Press (light on) for underscanning. The display size is reduced by approximately 5% so that four corners of the raster are visible.

**16 BLUE ONLY selector**

**RESET button**

Press (light on) to turn off the red and green signals. A blue signal is displayed as an apparent monochrome picture on the screen. This facilitates "chroma" and "phase\*" control adjustments and observation of VCR noise.

\* "Phase" control adjustment is effective only for the NTSC signals.

Press to reset the setting in the menu.

**17 DEGAUSS button**

Press this button momentarily. The screen will be demagnetized. Wait for 10 minutes or more before activating this button again.

**18 EXT SYNC (external sync) selector**

Keep this button in the off position (light off) to operate the monitor on the sync signal from the displayed video signal.

Keep this button in the on position (light on) to operate the monitor on an external sync signal fed through the EXT SYNC connector on the rear panel.

**19 LINE/RGB input selector**

Select the program to be monitored. Keep this button in the off position (light off) to feed a signal through the LINE A, LINE B or LINE C connectors. Keep this button in the on position (light on) to feed a signal through the RGB connectors.

**20 C/SDI selector**

When the LINE/RGB input selector is set to LINE (light off), press this button (light on) to feed a signal through the LINE C connectors.

When the LINE/RGB input selector is set to RGB (light on), press this button (light on) to feed the SDI signal (optional board is needed).

**21 B/COMPONENT selector**

When the LINE/RGB input selector is set to LINE (light off), press this button (light on) to feed a signal through the LINE B connectors.

When the LINE/RGB input selector is set to RGB (light on), press this button (light on) to feed the component signal.

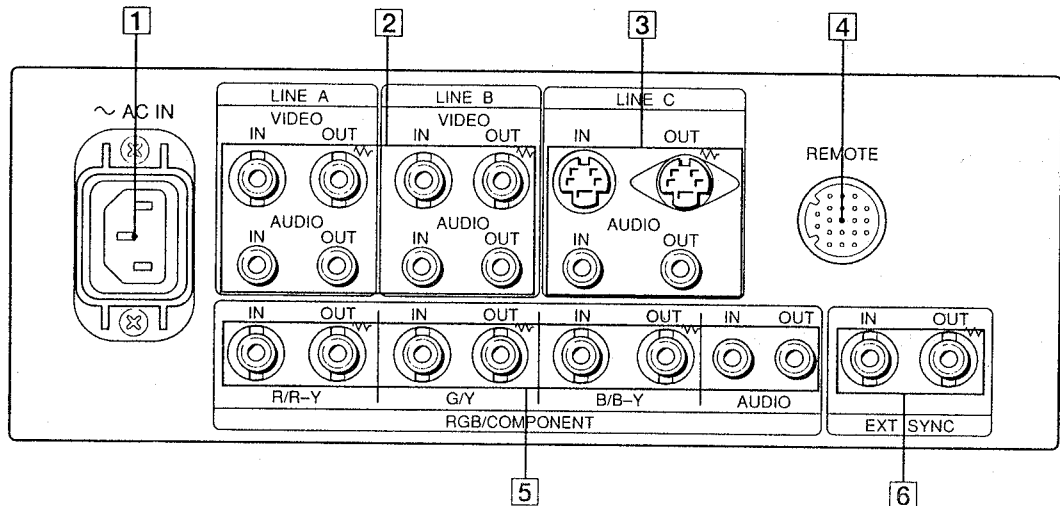
**22 A/RGB selector**

When the LINE/RGB input selector is set to LINE (light off), press this button (light on) to feed a signal through the LINE A connectors.

When the LINE/RGB input selector is set to RGB (light on), press this button (light on) to feed the RGB signal.

## Location and function of parts and controls

### Rear panel



(The 'V' mark indicates automatic termination.)

#### 1 AC IN socket

Connect the supplied AC power cord to this socket and to a wall outlet.

#### 2 LINE A, LINE B connectors

Two groups (A and B) of line input connectors for the composite video and audio signals and their loop-through output connectors.

To monitor the input signal fed through these connectors, keep the LINE/RGB selector in the LINE position (light off) and press the A/RGB or B/COMPONENT selector (light on) on the front panel.

##### VIDEO IN (BNC)

Connect to the video output of a video equipment, such as a VCR or a color video camera. For a loop-through connection, connect to the video output of another monitor.

##### VIDEO OUT (BNC)

Loop-through output of the VIDEO IN connector. Connect to the video input for a VCR or another monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

##### AUDIO IN (phono jack)

Connect to the audio output of a VCR or to a microphone via a suitable microphone amplifier. For a loop-through connection, connect to the audio output of another monitor.

##### AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN jack. Connect to the audio input of a VCR or another monitor.

#### 3 LINE C connectors

##### Y/C IN (4pin mini DIN)

Connect to the Y/C separate output of a video camera, VCR or other video equipment.

##### Y/C OUT (4pin mini DIN)

Loop-through output of the Y/C IN connector. Connect to the Y/C separate input of a VCR or another monitor. When the cable is connected to this connector, the 75-ohms termination of the input is automatically released, and the signal input to the Y/C IN connector is output from this connector.

##### AUDIO IN (phono jack)

Connect to the audio output of a VCR or a microphone (through a suitable microphone amplifier).

##### AUDIO OUT (phono jack)

Loop-through output of the AUDIO IN connector. Connect to the audio input of a VCR or another monitor.

#### 4 REMOTE connector (20pin)

Connect to the tally output of a control console, special-effect generator, etc. The tally lamp on the front panel will be turned on and off by the connected equipment. This connector can be used for connecting a remote controller. For the pin assignment of this connector, see "Specifications" on page 10.

## **5 RGB/COMPONENT connectors**

RGB signal or component signal input connectors and their loop-through output connectors.

To monitor the input signal fed through these connectors, keep the LINE/RGB selector in the RGB position (light on), and press the A/RGB or B/COMPONENT selector (light on) on the front panel.

### **R/R-Y IN, G/Y IN, B/B-Y IN (BNC)**

When the EXT SYNC selector on the front panel is in the off position (light off), the monitor operates on the sync signal from the G/Y channel.

#### **To monitor the RGB signal**

Connect to the analog RGB signal outputs of a video camera.

#### **To monitor the component signal**

Connect to the R-Y/Y/B-Y component signal outputs of a Sony Betacam video camera.

### **R/R-Y OUT, G/Y OUT, B/B-Y OUT (BNC)**

Loop-through outputs of the R/R-Y IN, G/Y IN, B/B-Y IN connectors

#### **For RGB signal**

Connect to the analog RGB signal inputs of a video printer or another monitor.

#### **For component signal**

Connect to the R-Y/Y/B-Y component signal inputs of a Betacam video recorder.

When the cables are connected to these connectors, the 75-ohms termination of the inputs is automatically released, and the signal inputs to the R/R-Y IN, G/Y IN, B/B-Y IN connectors are output from these connectors.

### **AUDIO IN (phono jack)**

Connect to the audio output of video equipment when the analog RGB or component signal is input.

### **AUDIO OUT (phono jack)**

Loop-through outputs of the AUDIO IN connector.

## **6 EXT SYNC (external sync) connectors**

To use the sync signal fed through this connector, press the EXT SYNC selector (light on).

### **IN (BNC)**

When this monitor operates on an external sync signal, connect the reference signal from a sync generator to this connector.

### **OUT (BNC)**

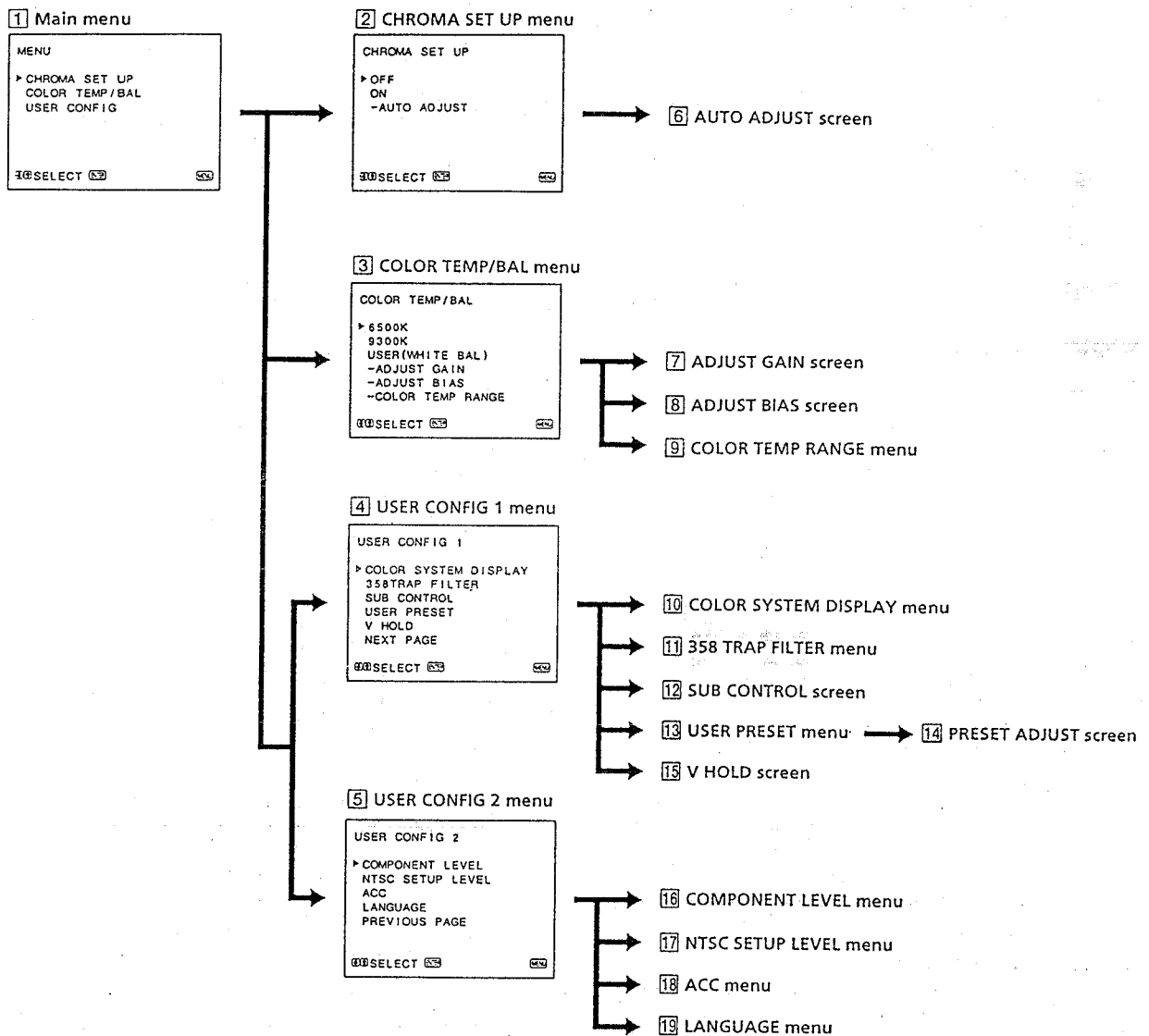
Loop-through output of the EXT SYNC IN connector.

Connect to the external sync input of video equipment to be synchronized with this monitor.

When the cable is connected to this connector, the 75-ohms termination of the input is released, and the signal input to the IN connector is output from this connector.

# Using on-screen menus

The flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings. The boxed number is for instructions on the next page.



## Operating through menus

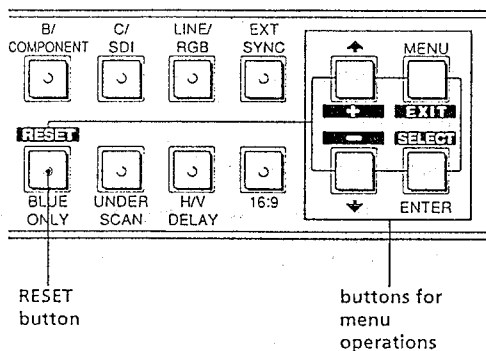
There are five buttons for menu operations on the front of the monitor. To display the main menu, first press MENU. The buttons you can use appear at the bottom of the menu screen.

### Functions of the buttons

Button	To select menu item	To adjust menu item selected
MENU EXIT	return to the previous menu	return to the previous menu
ENTER SELECT	decide a selected item	select an item
↑ +	move the cursor (►) upwards	increase selected value
↓ -	move the cursor (►) downwards	decrease selected value
RESET		reset current adjustment value to the factory setting

(The above items in white type correspond to the marks in the menu.)

front of monitor



- 1 **Main menu**  
Select an item and press ENTER to go to the following menu.
- 2 **CHROMA SET UP menu**  
Set to ON to adjust the internal decoder for CHROMA and PHASE (NTSC signal only) after AUTO ADJUST ([OFF]).
- 3 **COLOR TEMP/BAL menu**  
Select the color temperature from among 6500K, 9300K and USER. USER is set to 6500K in the factory setting. You can adjust or change the color temperature in USER mode (a measuring instrument is needed). [6500K]
- 4 **USER CONFIG 1 menu**  
Select an item to adjust. To go to the USER CONFIG 2 menu, select NEXT PAGE.
- 5 **USER CONFIG 2 menu**  
Select an item to adjust. To go to the USER CONFIG 1 menu select PREVIOUS PAGE.

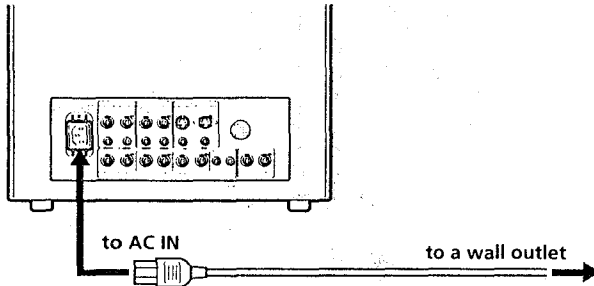
- 6 **AUTO ADJUST screen**  
Select the color bar signal (full, SMPTE, EIA) and press ENTER to start auto adjusting for CHROMA SET UP (NTSC signal only).
- 7 **ADJUST GAIN screen**  
Adjust GAIN in USER mode.
- 8 **ADJUST BIAS screen**  
Adjust BIAS in USER mode.
- 9 **COLOR TEMP RANGE menu**  
Select the color temperature range in USER mode. [5000K-10000K]
- 10 **COLOR SYSTEM DISPLAY menu**  
Select the color system display mode. In AUTO, the kind of color system being used appears on the screen each time you change the signal input. [AUTO]
- 11 **358 TRAP FILTER menu**  
Color spill or color noise may be eliminated if you select ON (NTSC signal only). [OFF]
- 12 **SUB CONTROL screen**  
You can finely adjust the controls on the front panel. CONTRAST, BRIGHT, CHROMA and PHASE control has a click at the center of its adjustment range. You can adjust the setting of the click position with this feature.
- 13 **USER PRESET menu**  
You can preset each control to a desired level and set it. If you set USER PRESET to ON, the REMOTE indicator lights up and the controls on the front panel do not work. The monitor operates with the internal memory settings. For adjustment, select PRESET ADJUST. [OFF]
- 14 **PRESET ADJUST screen**  
Adjust CONTRAST, BRIGHT, CHROMA, PHASE, VOLUME, APERTURE in USER PRESET.
- 15 **V HOLD screen**  
Adjust the vertical hold if the picture rolls vertically. When you cannot read the display, select the input that is not connected.
- 16 **COMPONENT LEVEL menu**  
Select the component level from among three modes.  
N10/SMPTE for 100/0/100/0 signal  
BETA 7.5 for 100/7.5/75/7.5 signal  
BETA 0 for 100/0/75/0 signal [N10/SMPTE]
- 17 **NTSC SETUP LEVEL menu**  
Select the NTSC setup level from two modes. The 7.5 setup level is mainly used in north America. The 0 setup level is mainly used in Japan. [0]
- 18 **ACC menu**  
Set ACC (Auto Color Control) circuit on or off. When the fine adjustment is needed, set ACC to OFF. Normally set it to ON. [ON]
- 19 **LANGUAGE menu**  
You can select the menu language from among the five languages (English, German, French, Italian, Spanish) on the menu. [ENGLISH]

([ ]) indicates the factory setting position.)

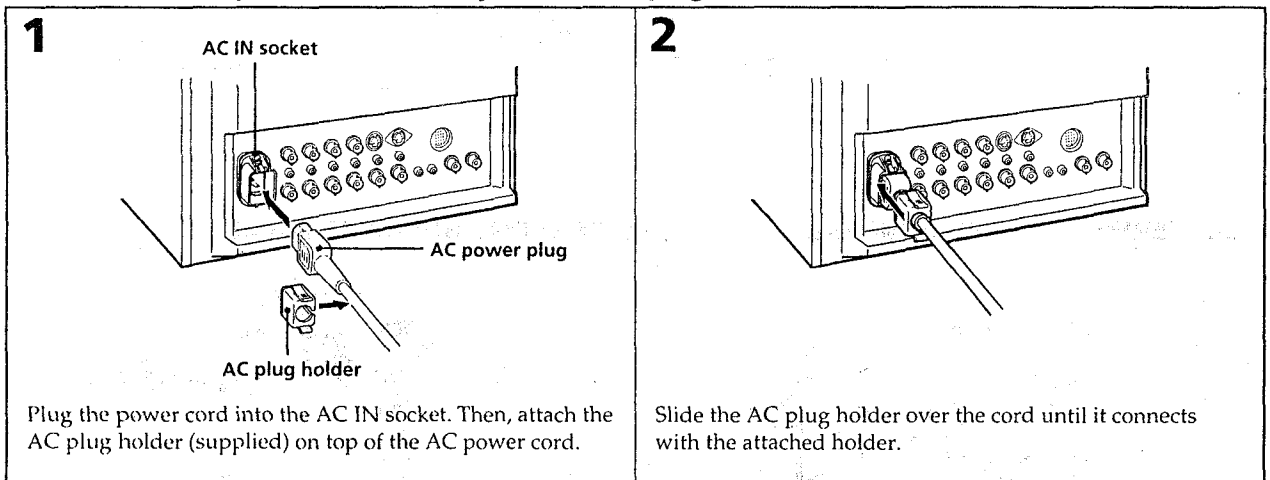
# Power sources

## House current

Connect the AC power cord (supplied) to the AC IN socket and to a wall outlet.



To connect an AC power cord securely with an AC plug holder

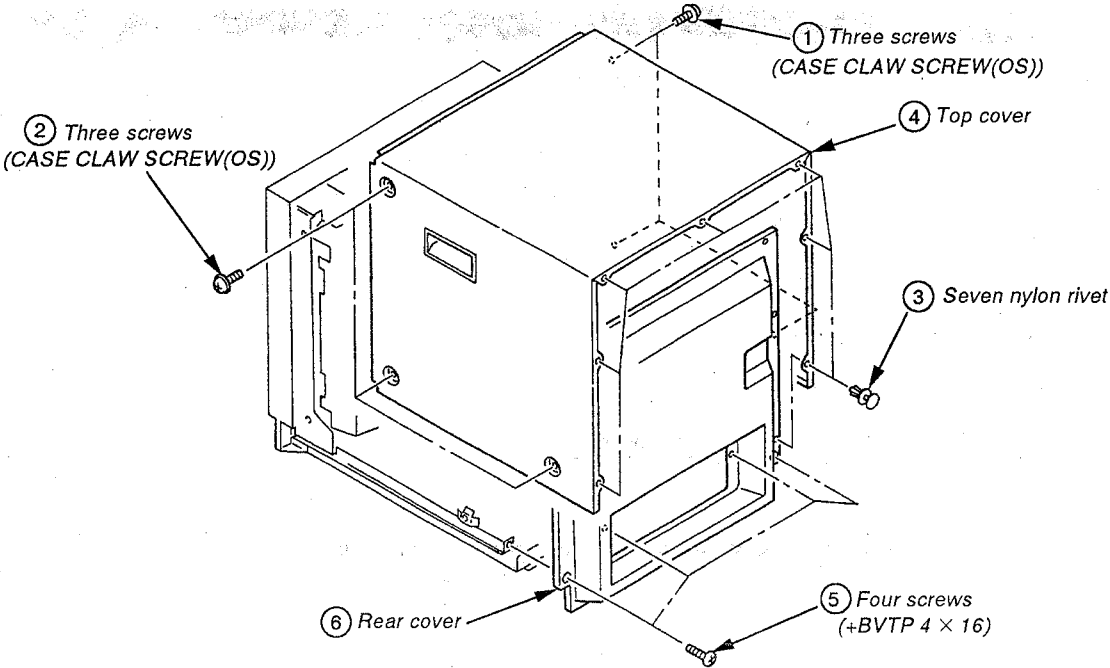


To remove the AC power cord

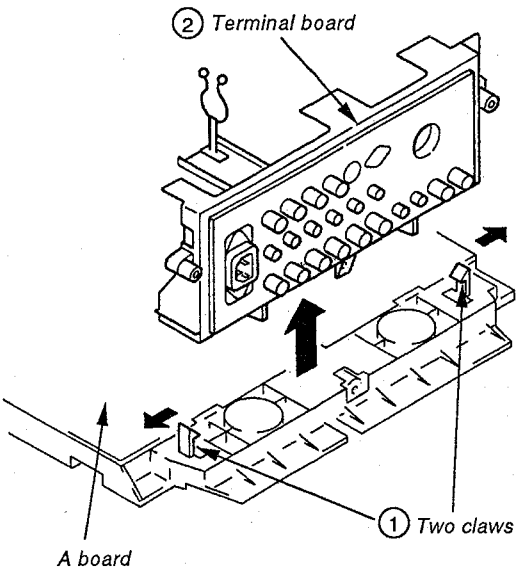
Pull out AC plug holder by squeezing the left and right sides.

SECTION 2  
DISASSEMBLY

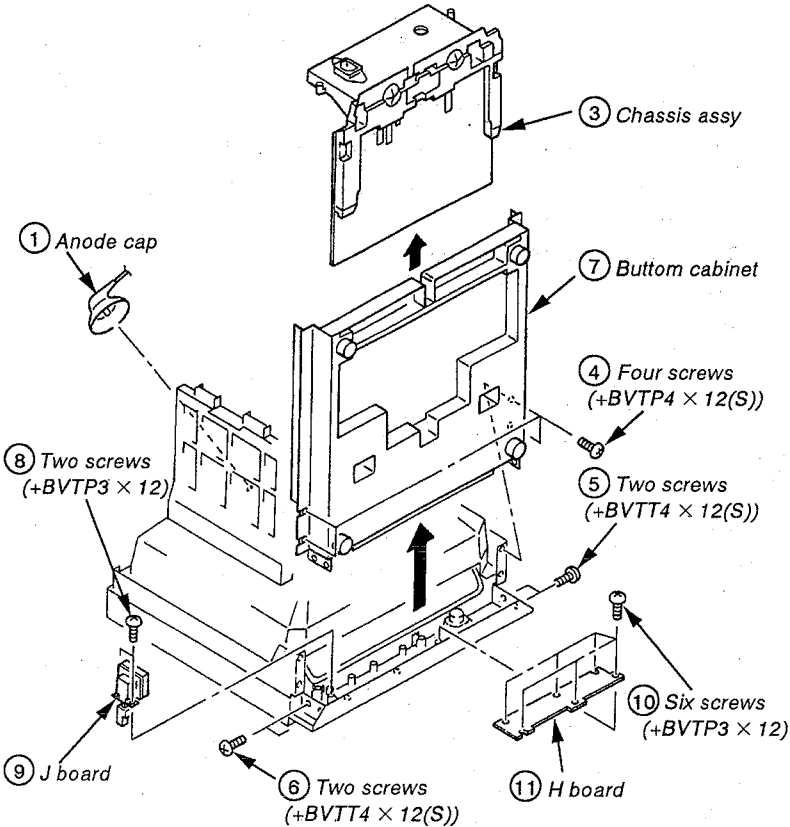
2-1. TOP COVER AND REAR COVER REMOVAL



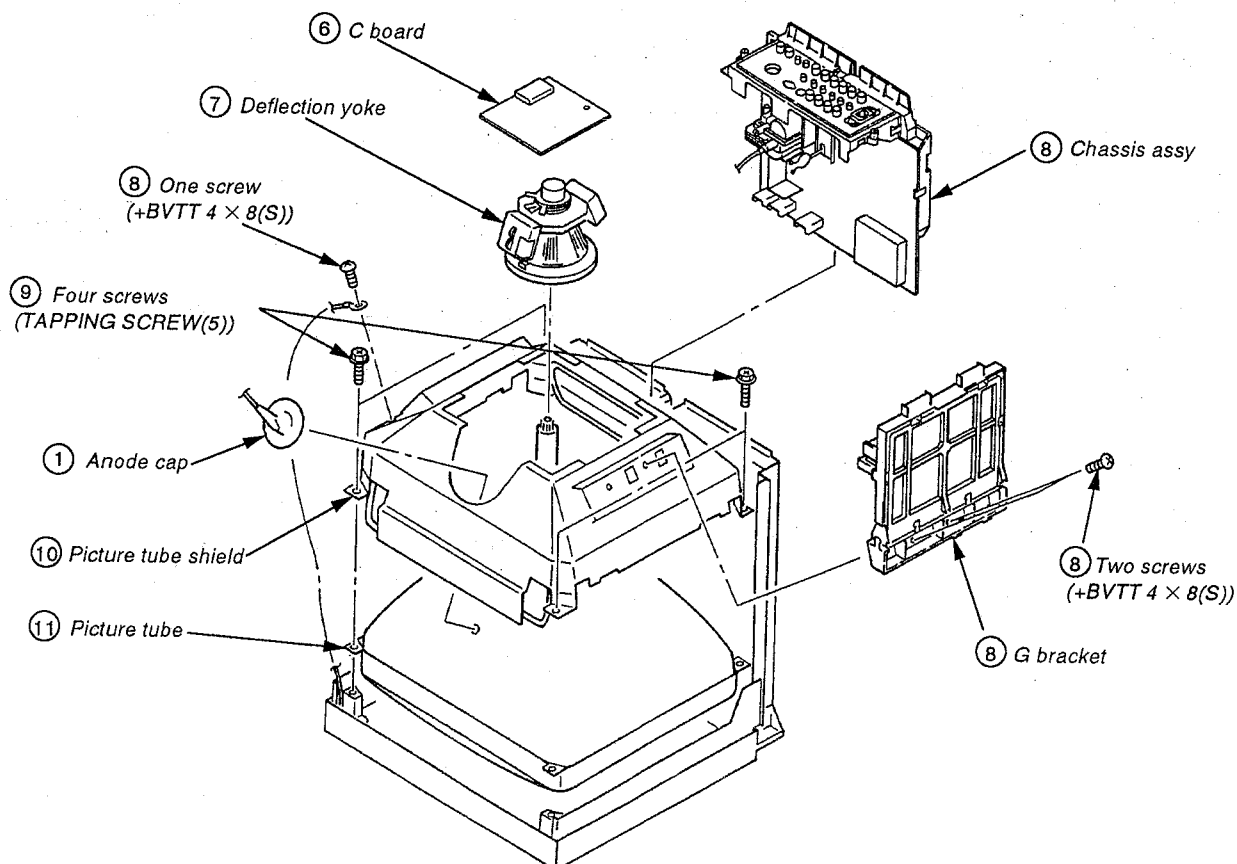
2-2. TERMINAL BOARD REMOVAL



2-2. TERMINAL BOARD REMOVAL



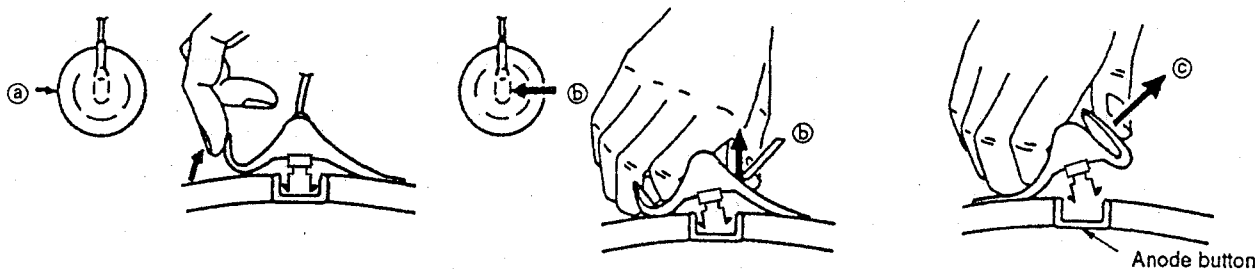
## 2-4. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

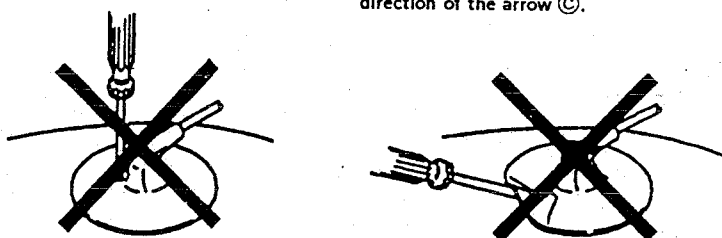
NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

### • REMOVING PROCEDURES



### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!  
A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly!  
The shatter-hook terminal will stick out or hurt the rubber.



SECTION 3  
SET-UP ADJUSTMENTS

3-1. PREPARATIONS (1)

Service Mode

This set is provided with a switch for service on the front panel that can be used to make various adjustments. The operation method of this switch is explained in detail below.

1. ENTERING THE SERVICE MODE

Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.

2. SERVICE MODE DISPLAY

(1)	(5)	(4)	(3)	(6)
(2)				

Range of Service Mode Display

- (1) The service items are largely classified into 16 types displayed by titles.
- (2) The names of the service items or READ / WRITE guidance, etc., are displayed. The names are displayed to the left and the guidance to the right.
- (3) This is the serial number for each of the service items. 1-120.
- (4) This is the adjustment data for the service items that are now stored in the RAM. Adjustments can be made by changing these values, but as long as nothing is written to the ROM the adjustment values will be erased by turning off the power or by reading, so please be careful.
- (5) When the adjustment data that is now displayed is identical with the data in the ROM, the cursor (▷) is displayed.
- (6) The present status is displayed.
  - [\*]: Writing to the ROM. Make sure not to turn off the power while this display is on.
  - [?]: ROM reading error. In this case, an image is output with the standard adjustment data that the microcomputer itself possesses.
  - [L]: Problem in the I<sup>2</sup>C bus.

3. FINISHING THE SERVICE MODE

Simultaneously press the [ENTER] key and the [DEGAUSS] key shown on the display of the menu.

4. EASY ON / OFF OF THE SERVICE MODE

If once entering the service mode after having turned on the power, easy ON / OFF is possible by once more pressing the A, B or C switch on the front panel (the LED lights) as long as the power is not turned off or as long as the service mode is not finished.

5. CHANGE OF POSITION OF THE SERVICE MODE DISPLAY

If the switch is continuously pressed when turning on in the above easy mode, the display position moves in the V direction. This method is used when the display is outside of the effective screen area.

6. CHANGE OF SERVICE ITEMS

The items are returned with the [MENU] key and forwarded with the [ENTER] key. When a key is continuously pressed, the operation will be repeated.

7. CHANGE OF SERVICE DATA

The service data is made larger with the [↑] key and smaller with the [↓] key. When continuously pressing the keys, the operation will be repeated.

8. READING OF SERVICE DATA

When reading data from the ROM to the RAM, press the [B / D] key once and check that the READ display is shown in the guidance, and then press the [B / O] key once again. The adjustment data that is written will return to its previous state, so please be careful.

9. WRITING OF SERVICE DATA

When writing data from the RAM to the ROM, press the [DEGAUSS] key once and check that the WRITE display is shown in the guidance, and then press the [DEGAUSS] key once again. Not only the displayed data will be written, but all data, so please be careful.

10. CARRYING OUT FACTORY RESETTING

In case the adjustment data has been destroyed for some reason, and you keep pressing the [B / O] key at the beginning of the above reading, the READ guidance will change to FACTRY RESET guidance in approximately 3 seconds so that the factory resetting can be carried out. By once again pressing the [B / O] key after this, resetting will be carried out ([\*] will be displayed as status) and factory resetting will be executed. However, in case the data available at the time of shipment from the factory has been destroyed, or if the ROM has been replaced, etc., or if factory setting mentioned later on has been carried out, factory resetting is executed.

11. CARRYING OUT FACTORY SETTING

Make sure to make possible the above factory resetting by making a copy of the adjustment data when replacing the ROM. If you keep pressing the [DEGAUSS] key at the beginning of the above writing, the WRITE guidance will change into FACTORY RESET guidance after approximately 3 seconds. By once again pressing the [DEGAUSS] key after this, setting will be carried out ([\*] will be displayed as status) and the data will be copied. By carrying out this operation, the selection items of the menu and the adjustment values will be reset to the standard conditions, so please be careful. If this operation is carried out once, it cannot be carried out again, but the FACTORY SET FLAG (No. 120) in the service mode can be set to 1.

## ROM INITIAL WRITING VALUE OF SERVICE DATA

SERVICE MAP Ver 5. x (1-120)

NO.	SERVICE ITEM	MAX	14"	20"	NO.	SERVICE ITEM	MAX	14"	20"
1	NOR 50 DEF H FREQUENCY	255	80	107	61	C / T1 ??00K BIAS (RED)	1023	443	443
2	VIDEO PHASE	255	141	127	62	BIAS (GREEN)	1023	512	512
3	V SIZE	255	165	155	63	BIAS (BLUE)	1023	394	394
4	V CENTER	255	122	116	64	GAIN (RED)	1023	662	662
5	NOR 60 DEF H FREQUENCY	255	90	112	65	GAIN (GREEN)	1023	700	700
6	VIDEO PHASE	255	120	123	66	GAIN (BLUE)	1023	536	536
7	V SIZE	255	157	161	67	B / O (RED)	255	120	120
8	V CENTER	255	128	111	68	B / O (GREEN)	255	125	125
9	NOR DEF H SIZE	255	111	102	69	C / T2 ??00K 3200K SW	1	0	0
10	PIN PHASE	255	108	110	70	BIAS (RED)	1023	263	263
11	PIN AMP	255	112	122	71	BIAS (GREEN)	1023	512	512
12	U/L PIN	255	126	155	72	BIAS (BLUE)	1023	459	459
13	SEXY	255	128	128	73	GAIN (RED)	1023	572	572
14	V LINEARITY	255	132	82	74	GAIN (GREEN)	1023	700	700
15	V BOW	* 63	32	32	75	GAIN (BLUE)	1023	656	656
16	V ANGLE	* 63	32	32	76	B / O (RED)	255	86	86
17	U/SDEF V SIZE (50)	255	124	134	77	B / O (GREEN)	255	105	105
18	V SIZE (60)	255	116	131	78	W / B SUB CON (4 : 3, NORMAL)	255	210	210
19	H SIZE	255	115	89	79	SUB CON (4 : 3, H / V DELAY)	255	122	122
20	PIN PHASE	255	118	112	80	SUB CON (16 : 9, NORMAL)	255	165	165
21	PIN AMP	255	74	96	81	SUB CON (16 : 9, H / V DELAY)	255	93	93
22	16:9 NOR DEF V SIZE (50)	255	81	89	82	SUB BRIGHT	255	71	71
23	V SIZE (60)	255	85	100	83	USER B / O (RED)	255	120	120
24	PIN PHASE	255	113	120	84	USER B / O (GREEN)	255	125	125
25	PIN AMP	255	64	68	85	OTHER OSD POSITION	255	129	129
26	U/L PIN	255	132	136	86	V HOLD	255	128	128
27	16:9 U/S DEF V SIZE (50)	255	41	59	87	H BLANKING	255	68	68
28	V SIZE (60)	255	35	55	88	V BLANKING (50)	255	63	63
29	PIN PHASE	255	124	122	89	16 : 9 BLANKING START(50)	255	37	37
30	PIN AMP	255	47	55	90	16 : 9 BLANKING END(50)	255	163	163
31	COMPONENT SUB PHASE	255	140	140	91	V BLANKING (60)	255	117	117
32	SUB CHROMA (NORMAL)	255	104	104	92	16 : 9 BLANKING START(60)	255	40	40
33	SUB CHROMA (SMPTE)	255	168	168	93	16 : 9 BLANKING END(60)	255	215	215
34	R-Y LEVEL	255	155	155	94	H DELAY	255	165	165
35	NTSC BURST GATE PULSE WIDTH	255	22	22	95	V DELAY	255	101	101
36	CRYSTAL	255	51	51	96	HP POSITION	255	130	130
37	PHASE (NORMAL)	255	103	103	97	HP WIDTH (NORMAL)	255	90	90
38	PHASE (ACC OFF)	255	112	112	98	HP WIDTH (H / V DELAY)	255	35	35
39	B-Y PHASE	255	141	141	99	SYSTEM SDI AUDIO	7	5	5
40	CHROMA (NORMAL)	255	123	123	100	358TRAP FILTER	1	0	0
41	CHROMA (ACC OFF)	255	20	20	101	ACC	1	0	0
42	R-Y LEVEL	255	87	87	102	CAPTION VISION	7	0	0
43	NTSC 443 CRYSTAL	255	65	65	103	COMPONENT LEVEL	3	2	2
44	PHASE (NORMAL)	255	80	80	104	NTSC SETUP LEVEL	1	0	0
45	PHASE (ACC OFF)	255	75	75	105	CHROMA SET UP	1	0	0
46	B-Y PHASE	255	140	140	106	COLOR SYSTEM DISPLAY	3	0	0
47	CHROMA (NORMAL)	255	117	117	107	COLOR TEMPERATURE	3	0	0
48	CHROMA (ACC OFF)	255	87	87	108	USER PRESET	1	0	0
49	R-Y LEVEL	255	100	100	109	LANGUAGE	7	0	0
50	PAL PHASE (NORMAL)	255	87	87	110	RGB SYNC	1	0	0
51	PHASE (ACC OFF)	255	72	72	111	OPTION BOARD	7	0	0
52	B-Y PHASE	255	105	105	112	AGING MODE	1	0	0
53	CHROMA (NORMAL)	255	141	141	113	PAL-M	1	0	0
54	CHROMA (ACC OFF)	255	90	90	114	MODEL	15	**	**
55	R-Y LEVEL	255	120	120	115	COLOR TEMP DISP 1	127	65	65
56	SECAM CHROMA	255	120	120	116	COLOR TEMP DISP 2	127	93	93
57	R-Y LEVEL	255	229	229	117	REMOTE ADDRESS	127	0	0
58	COLOR BALANCE (R-Y)	255	116	116	118	RESERVED 1	1	0	0
59	COLOR BALANCE (B-Y)	255	98	98	119	RESERVED 2	1	0	0
60	C/T1 ??00K 3200K SW	1	0	0	120	FACTORY SET FLAG	1	0	0

\* Among the data 8 bits (MAX255) only the upper 6 bits can be changed.

\*\* PVM-1954Q, PVM-1350/1351Q/1354Q.

PREPARATIONS (2)

\* When composite video or component signals are supplied, they must be supplied as below.

Signal		Signal Contents	Standard Level P-W
COMPOSITE VIDEO	358NT 443NT	100% WHITE	0.714V
		75% WHITE	0.536V
		BURST (GREEN) (This item only P-P)	286mV (632mV)
	PAL SECAM	100% WHITE	0.7V
		75% WHITE	0.525V
		PAL BURST (GREEN) (This item only P-P)	300mV (632mV)
COMPONENT	BETA 0	100% WHITE Y	0.7V
		75% WHITE Y	0.525V
		75% COLOR B-Y, R-Y (This item only P-P)	0.7V
	SMPTE	100% WHITE Y	0.7V
		75% WHITE Y	0.525V
		75% COLOR B-Y, R-Y (This item only P-P)	0.525V

\* In this document, terms inside boxes   are names of service mode adjustments.

Example 60H-FREQ

\* After making adjustments in service mode, write the adjustment data before cutting off the power. If you cut off the power without writing, the results of your adjustments are all lost.

\* Standard inspection conditions

Unless specifically specified otherwise in this document, the following conditions are used for adjustments and inspections.

APERTURE	MIN
BRIGHT	50% (Center click)
CHROMA	50% (Center click)
PHASE	50% (Center click)
CONTRAST	80% (Center click)
VOLUME	50%

3-2. WRITING MODEL DATA

- In service mode, write in the following model data at No. 114 MODEL.  
PVM-2054QM 0
- In service mode, write in the following data at No. 115 COLOR TEMP DISP 1.  
PVM-2054QM 65
- In service mode, write in the following data at No. 116 COLOR TEMP DISP 2.  
PVM-2054QM 93

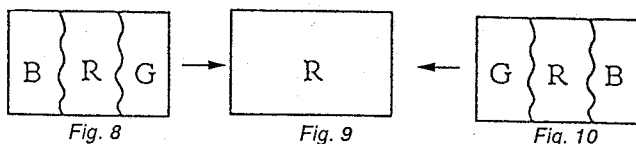
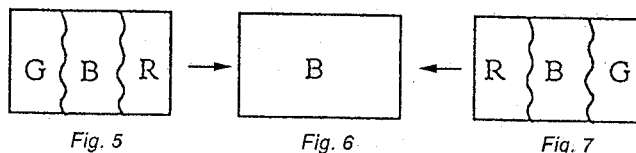
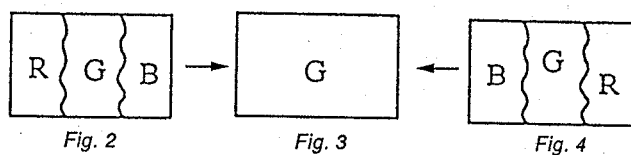
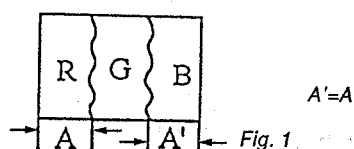
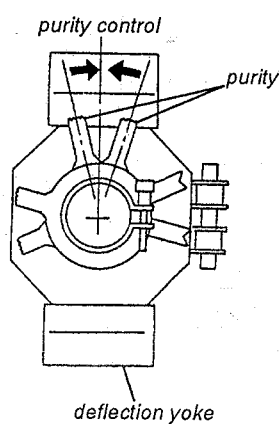
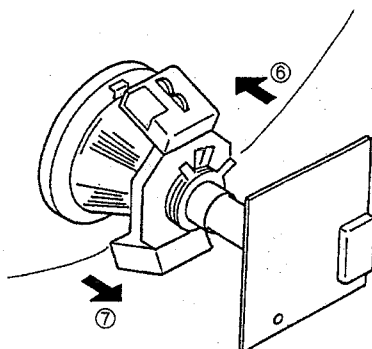
3-3. PICTURE OUTPUT

- Set the AC input voltage.  
(1) Input the video and audio signals to the corresponding terminals on the connector panel.  
(2) Set the sliduck AC voltage as shown on the right. (\*1-1)

Model	Voltage
PVM-2054QM	AC220 ± 3V (Distortion rate : 3% or less)

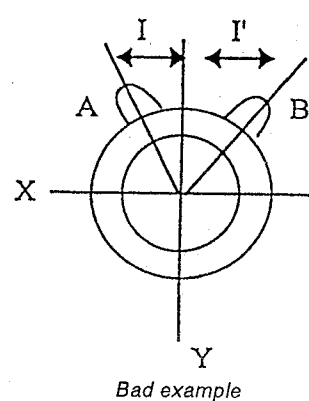
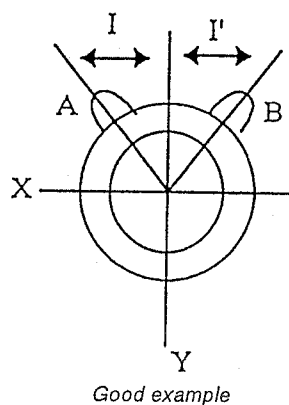
3-4. LANDING ADJUSTMENT

- Preparations
  - To reduce the influence of geomagnetism, face the set's CRT screen east or west.
  - Loosen the deflection yoke fixture and lower the deflection yoke to the rear.
  - Switch on the Power switch and degauss with the degausser.
  - Adjust the deflection yoke tilt.
- Adjustment
  - CONT ..... MAX  
BRT..... Position providing good vision
  - The rough adjustments of the white balance, G2, and convergence must be completed already.
  - Set green-only.
  - Adjust the purity knob so that the green comes to the center of the screen. Make the red and blue about even. Fig. 1
  - Switch to blue only, red only, and green only and verify each. Fig. 1, 2, and 3
  - Bring the deflection yoke gradually forward and adjust the deflection yoke so that the R and B at both sides of the screen become green. Fig. 2 → 3
  - If the deflection yoke comes too far forward, you will see the pattern shown in Figure 4. If that happens, lower the deflection yoke to the rear. Fig. 4 → 3
  - Switch the single color switch to B and verify the single color. Fig. 6
  - Switch the single color switch to R and verify the single color. Fig. 9
  - When one of the colors does not become the single color correctly, check by repeating Items 7 and 8 based on the single color not coming into adjustment.  
If you can not obtain landing in the corners, paste on magnets.
  - Switch to an all-white signal and check the uniformity.
  - When the deflection yoke position is determined, fasten it with the fixture.



### 3-5. CONVERGENCE ADJUSTMENT

1. Input a dot pattern signal.  
CONT ..... Position providing good vision  
BRT ..... MIN
2. Align the horizontal R, G, and B dots at the center of the screen with the H-STAT VR. (\*1)  
\*1 : If the H-CENTER adjustment was after the H-STAT adjustment, re-adjust the H-STAT.  
(The H-CENT VR changes the H-STAT too.)
3. Align the R, G, and B at the center of the screen with the V-STAT magnets. (\*2)  
\*2 : After the V-STAT adjustment, paint on the knobs to lock them.

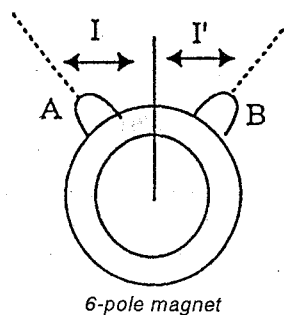


V-STAT magnet knobs  
While keeping the angles for A and B equal ( $I=I'$ ), align the vertical convergence.

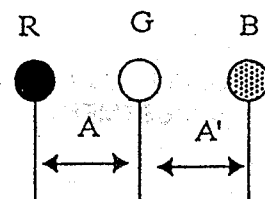
If the A and B knobs are not symmetrical ( $I \neq I'$ ), this has bad effects. The focus may deteriorate and beam striking may occur.

4. For HMC, use the 6-pole magnet to adjust the R and B dots to be symmetrical left and right about the G dot. (\*1)

\*1:



The HMC adjustment changes the opening of the 6-pole magnet.



Adjust the 6-pole magnet so that  $A=A'$ . You must maintain the relationship  $I \neq I'$  while moving the magnet.

5. For VMC, use the 6-pole magnet to adjust the R and B dots to be symmetrical above and below the G dot. (\*2)

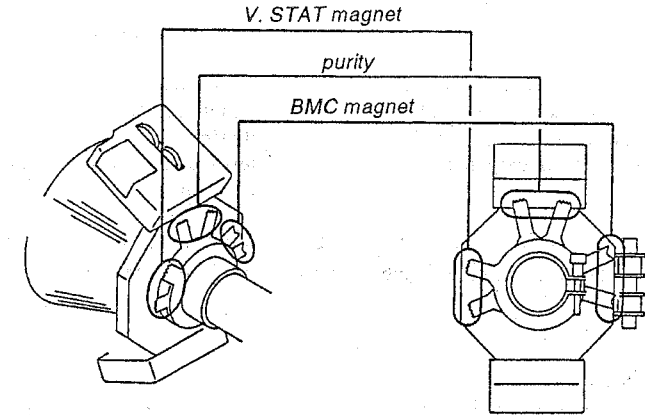
\*2:

6-pole magnet

The VMC adjustment does not change the opening of the 6-pole magnet, but turns it left and right.

Adjust so that the displacement up and down are the same.

6. Adjust by repeating the adjustments in Items 2 through 5. (\*3)
- \*3: The above adjustment may affect the landing, so after this adjustment, check the landing again.
7. After the adjustment is complete, paint on the knobs to lock them.



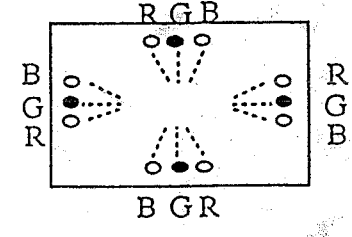
3-6. DEFLECTION YOKE NECK ROTATION ADJUSTMENT

If there is misconvergence at both sides on the X or Y axis of the screen, turn the neck of the deflection yoke in the direction of the arrow to reduce the misconvergence for the entire CRT screen to within the tolerance.

1. Reverse misconvergence pattern

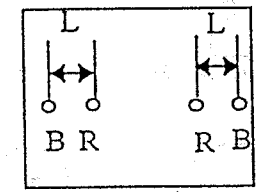
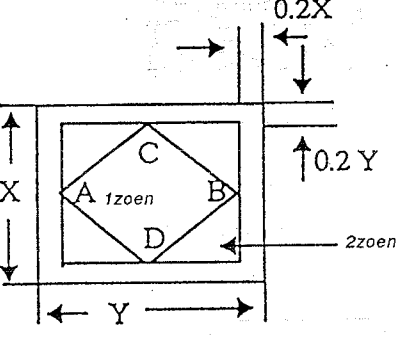
Turn the deflection yoke neck down.

Positive misconvergence pattern  
Turn the deflection yoke neck up.



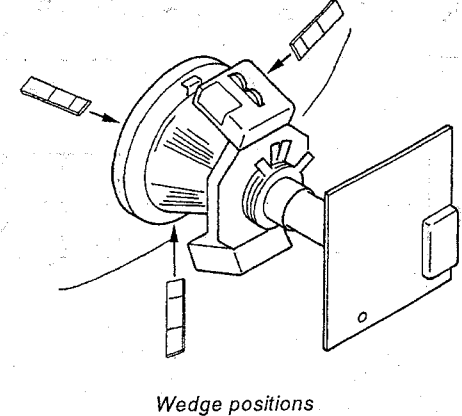
Pattern when deflection yoke too far to the left

As viewed from the CRT screen, turn the deflection yoke neck to the right.

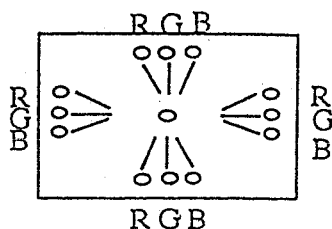


Pattern when deflection yoke too far to the right

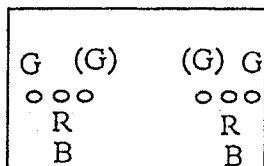
2. Insert the three wedges in the deflection yoke and CRT funnel surface to fasten the deflection yoke.



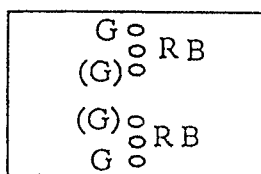
3. The pattern below can not be corrected by turning the neck.



\* Gun rotation  
The beam is twisted at both sides on the X axis and Y axis.



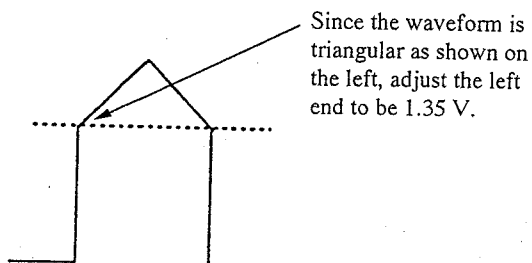
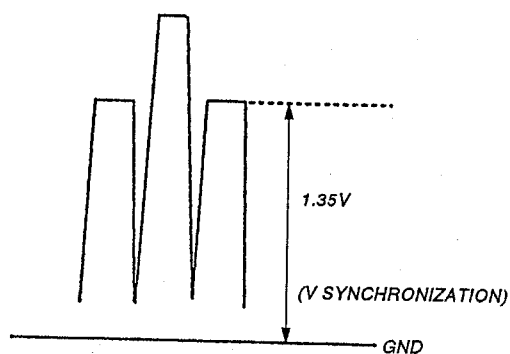
\* HCR large (small)  
At both sides of the screen, the G raster horizontal component is wider (narrower) than those of the R and B rasters.



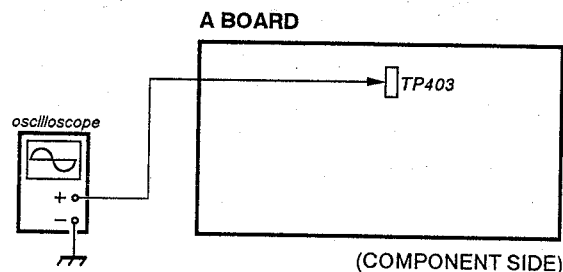
\* VCR large (small)  
At both sides of the screen, the G raster vertical component is wider (narrower) than those of the R and B rasters.

### 3-7. G2 ADJUSTMENT

1. Input a 525 monoscope signal.
2. Connect the oscilloscope to A board TP403.
3. Of the three reference pulses, measure the lowest one.
4. With the Screen VR, adjust so that left end of the waveform is :  $1.35 \text{ V} \pm 0.05 \text{ V}$



Since the waveform is triangular as shown on the left, adjust the left end to be 1.35 V.



### 3-8. WHITE BALANCE ADJUSTMENT

For measuring equipment, use a color analyzer. (for example Minolta, etc.)

1. Input a 525 monoscope signal.  
(Input from Line A or Line B, with no burst.)
2. Set :  
CONT ..... 0%  
BRT..... 50%
3. On a 20-tone gray scale, adjust service mode **SUB BRIGHT** so that  
0 and 5 IRE → cut off  
10 IRE → slight glow
4. Input 525 all-white (no burst, composite signal).
5. Set CONT to 80%.
6. Adjust the all-white signal luminance so that the screen luminance is 3 NIT.
7. Press MENU and select COL TEMP/BAL.
8. Select 6500 K.
9. Put the unit into service mode. (\*1)  
\*1 : Set **3200 K SW** to 0 for both 9300K and 6500K.
10. Adjust to the standard values with **C/T1 6500K BIAS**.  
(G must be fixed at "512".) (\*2)  
\*2 : Adjust the cut-off to be 3 NIT.
11. Switch the all-white signal luminance to 100 IRE.
12. Adjust to the standard values with **C/T1 6500K GAIN**.  
(G must be fixed at "700".)
13. Repeat Items 10, 11 and 12 until the adjustment is complete, then write the adjustment data.
14. Press MENU and select COL TEMP/BAL.
15. Select 9300 K.
16. In the same manner as in Items 10, 11, 12 and 13 make the **C/T2 9300K BIAS** and **C/T2 9300K GAIN** adjustments.

### 3-9. BLUE-ONLY WHITE-BALANCE ADJUSTMENT

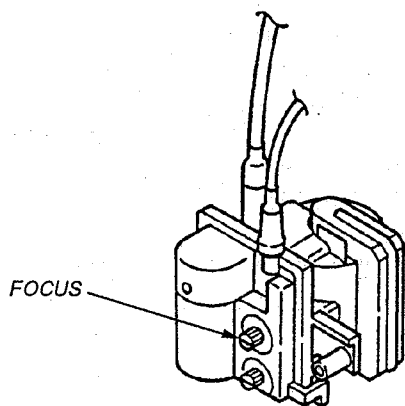
1. Switch the user control SW Blue Only On (to set blue-only mode).
2. Input an all-white signal (no burst composite signal). (\*1)  
The luminance of the all-white signal must be 100 IRE.  
CONT ..... 80%  
BRT ..... 50%
3. Select COL TEMP/BAL.
4. Select 6500 K.
5. Adjust to the standard values with **C/T1 6500K B/O (RED)**  
and **C/T1 6500K B/O (GREEN)**.
6. Select COL TEMP/BAL.
7. Select 9300 K.
8. Adjust to the standard values with **C/T1 9300K B/O (RED)**  
and **C/T1 9300K B/O (GREEN)**.
9. Check that the white balance is obtained when the all-white signal luminance is adjusted and the screen luminance is 8 NIT.

### 3-10 SUB BRT ADJUSTMENT

1. Input a 525 monoscope signal.
2. CONT ..... MIN  
BRT ..... CENTER (50%)
3. Put the unit into service mode and select **SUB BRIGHT**.
4. Adjust **SUB BRIGHT** so that 10 IRE gives a slight glow and 10 IRE gives cut off.

### 3-11. FOCUS ADJUSTMENT

1. Input a 525 monoscope signal.
2. Adjust the focus to optimize the focus on the characters "30" at the center of the screen.
3. Switch to an all-white signal and check the uniformity.



## SECTION 4 SAFETY RELATED ADJUSTMENT

The following adjustments should always be performed when replacing the following components (marked with  $\square$ ,  $\blacksquare$  on the schematic diagram).

+B detection.....  $\blacksquare$  R1535  
Tertiary coil detection.....  $\blacksquare$  R1536

Hold Down Circuit.....  $\blacksquare$  A board IC500, D533, R1537, C592, R1536, C523, R1560, R551, C549, R518, C506, C512, D501, R506, R519, T501, IC507

Beam Current Protector Circuit.....  $\blacksquare$  A board R508, R515, R516, R517, C513, Q500, Q511

B+ Regulator Circuit.....  $\blacksquare$  A board C603, IC602,  $\blacksquare$  G board R1535

### B+ MAX VOLTAGE CONFIRMATION (RV601)

Standard : 115.0~117.0 VDC

Check Condition : Input voltage : 130~132 VAC

Note : Use NF Power Supply or make sure that distortion factor is 3% or less.

Input signal : ALL White

Controls : BRT & CONT  $\Rightarrow$  Minimum

### HOLD-DOWN CIRCUIT VOLTAGE CONFIRMATION

Check Condition : Input voltage : 130~132 VAC

Input signal : monoscope signal

Controls : BRT & PIC  $\Rightarrow$  initial reset

B+ voltage : Less than 117.0 V

### (1) Hold down circuit (+B Actuation)

- a) When IABL =  $1000 \pm 50 \mu A$ , raster goes out at less than 131.0 V of +B voltage (TP502) by adjusting  $\triangle$  R690 and RV601.

Input signal : ALL white  
 $\triangle$  R690 : 470-5.6k 1/4 W RN

- b) When IABL =  $120 \pm 20 \mu A$ , raster goes out at less than 134 V of +B voltage (TP502) by adjusting  $\triangle$  R690 and RV601.

Input signal : Dot

### (2) Hold down circuit (Tertiary coil detection voltage)

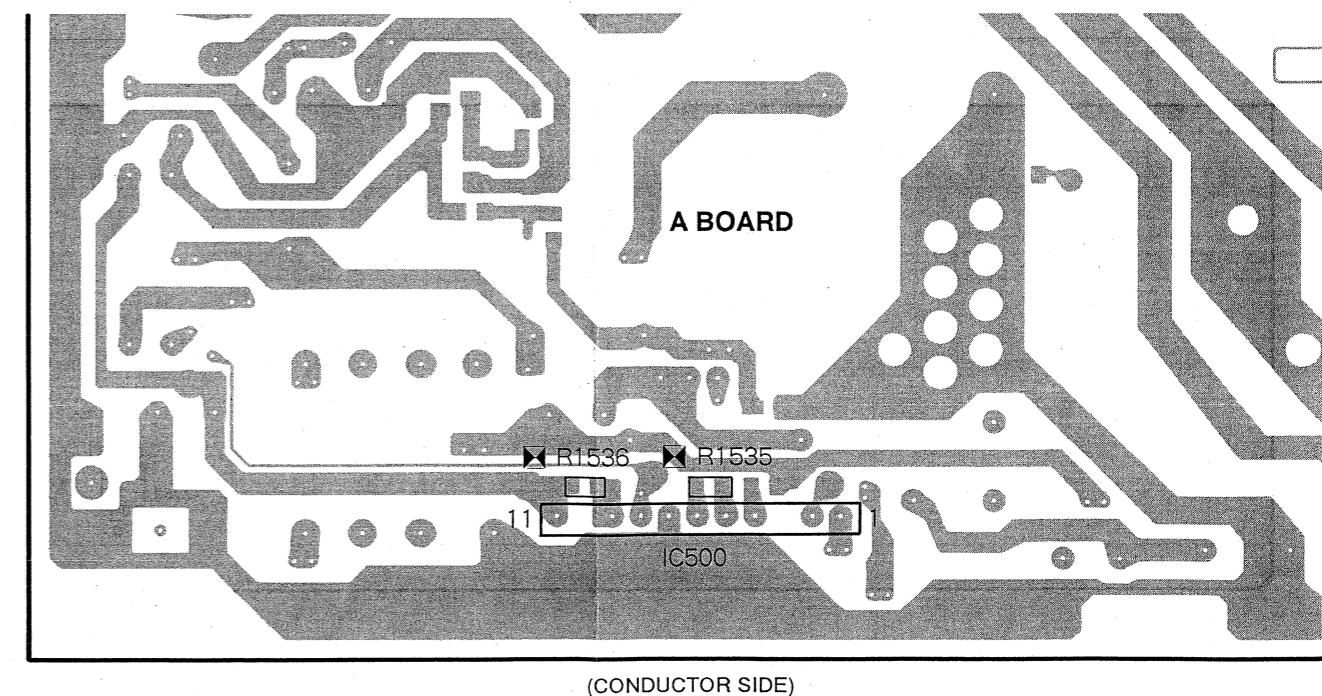
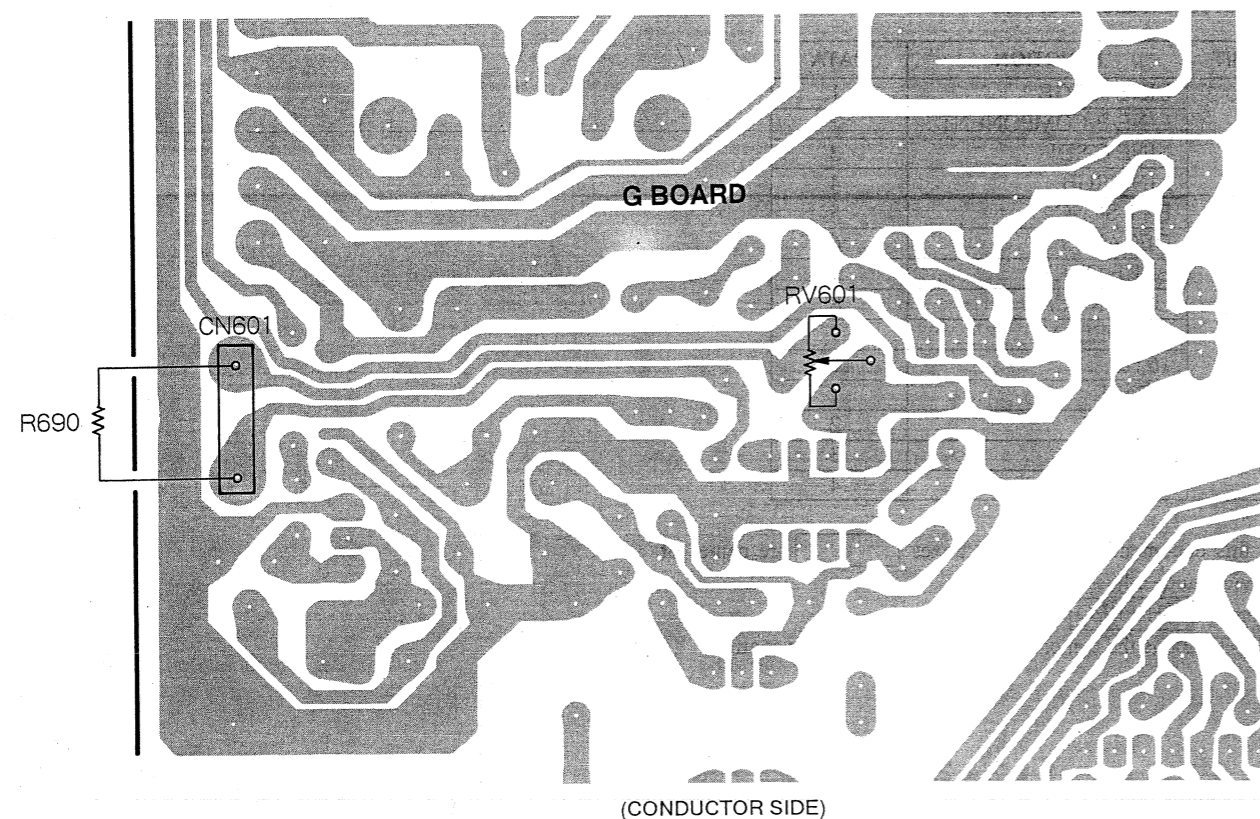
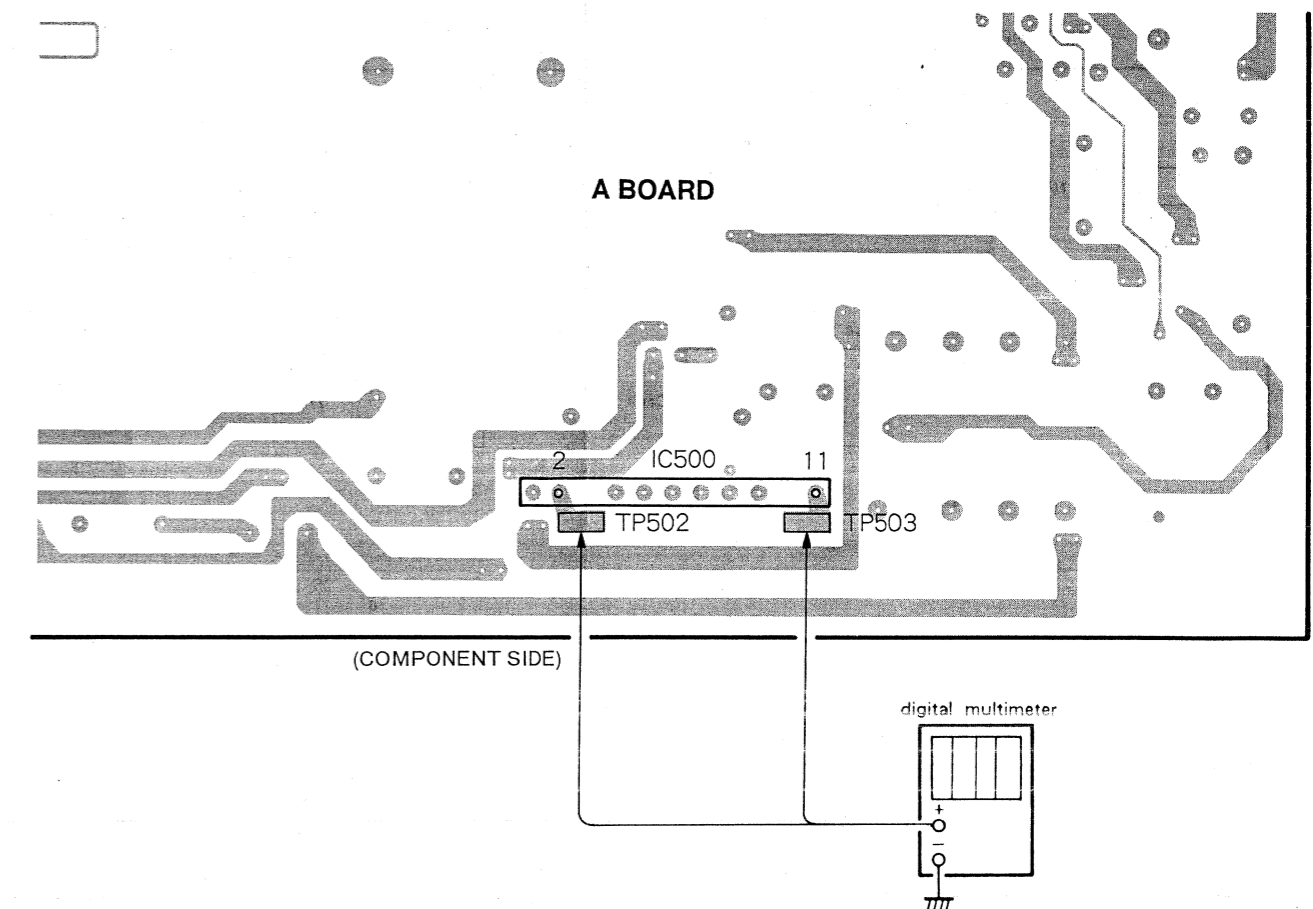
Confirmatory item : 110.0 V voltage should be applied to the (11) pin of IC500.

- a) When IABL =  $1000 \pm 50 \mu A$ , raster goes out when applying less than DC 148.0 V voltage to the (11) pin (TP503) of IC500 from outside.

Input signal : ALL white

- b) When IABL =  $120 \pm 20 \mu A$ , raster goes out when applying less than DC 148.5 V voltage to the (11) pin (TP503) of IC500 from outside.

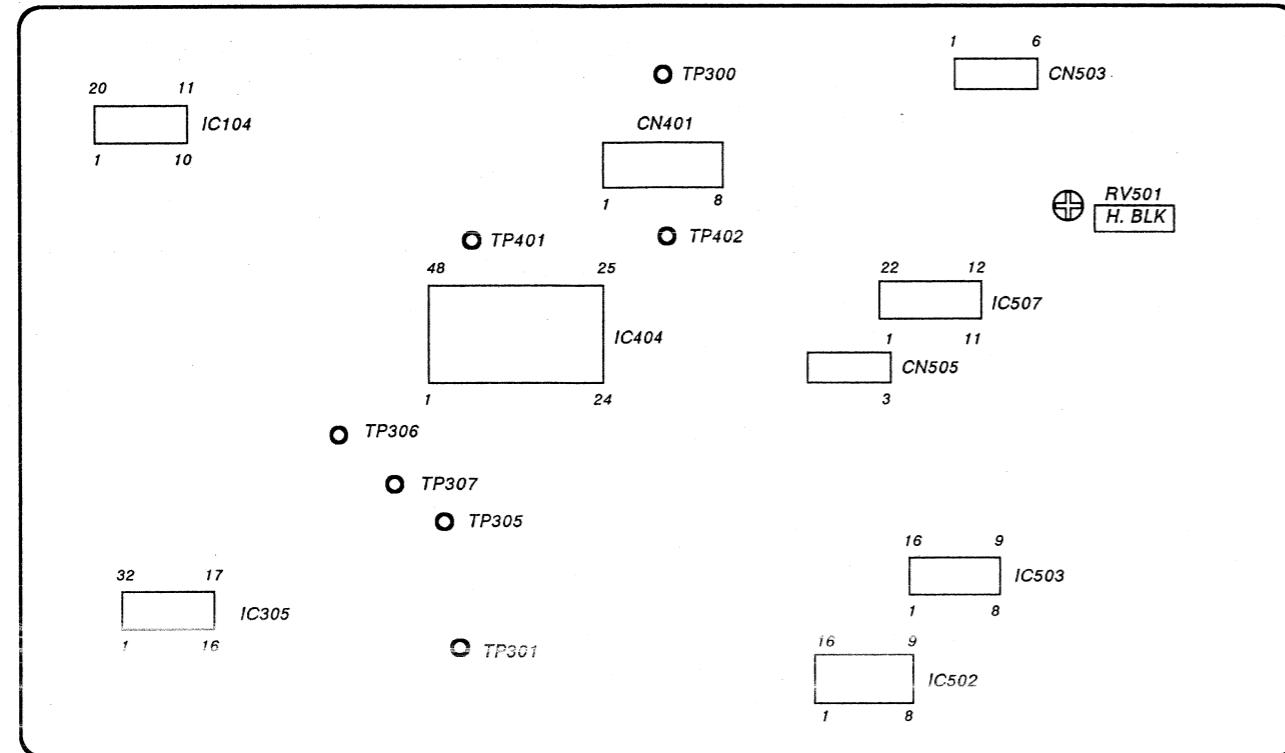
Input signal : Dot



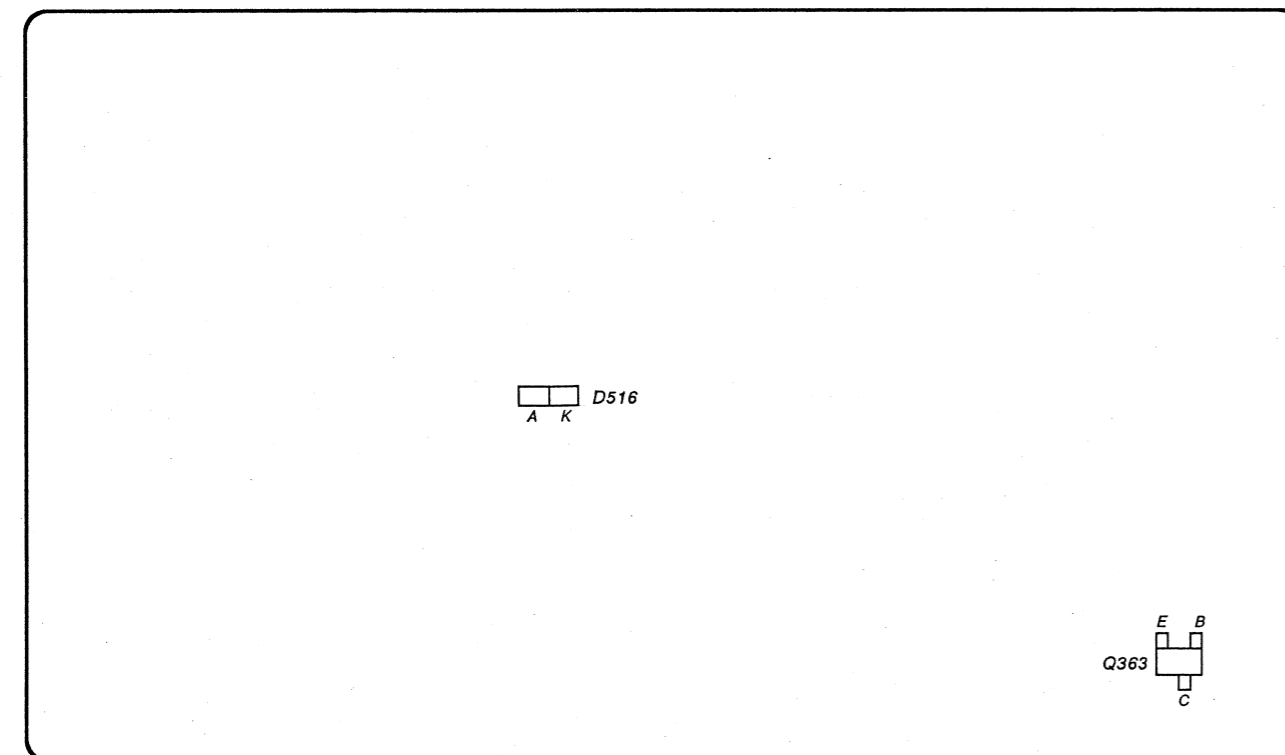
## SECTION 5 CIRCUIT ADJUSTMENTS

### 5-1. A BOARD ADJUSTMENT

A BOARD — COMPONENT SIDE —



A BOARD — CONDUCTOR SIDE —



### I. Preparations

\* When composite video or component signals are supplied from connector CN301, they must be supplied taking into account the effect of the Q board as indicated on the right.

The levels of the signals supplied must be within  $\pm 2\%$  of the standard on the right.

Signal		Signal Contents	Standard Level (Pedestal-White)	Reduction Ratio	Connector Feed Level (Pedestal-White)
COMPOSITE VIDEO (75% COLOR BAR)	358NT 443NT	100% WHITE	0.714V	93%	0.664V
		75% WHITE	0.536V	93%	0.498V
		BURST (GREEN) (This item only P-P)	286mV (632mV)	94% (94%)	269mV (594mV)
	PAL SECAM	100% WHITE	0.7V	94%	0.651V
		75% WHITE	0.525V	94%	0.488V
		PAL BURST (GREEN) (This item only P-P)	300mV (664mV)	94% (94%)	282mV (624mV)
COMPONENT (75% COLOR BAR)	BETA0	100% WHITE Y	0.7V	94.8%	0.664V
		75% WHITE Y	0.525V	94.8%	0.498V
		75% COLOR B-Y, R-Y (This item only P-P)	0.7V	94.8%	0.664V
	SMPTE	100% WHITE Y	0.7V	94.8%	0.664V
		75% WHITE Y	0.525V	94.8%	0.498V
		75% COLOR B-Y, R-Y (This item only P-P)	0.525V	94.8%	0.498V

\* The function or input can be selected by writing the corresponding data from the table below into microcomputer (IC101) RAM address 0006h.

BIT	FUNCTION	DATA
0-3	LINE A/RGB	1
	LINE B/COMPONENT	2
	LINE C/SDI	3
	LINE/RGB	4
	EXT SYNC	5
	DEGAUSS	6
	BLUE ONLY	7
	UNDER SCAN	8
	H/V DELAY	9
	16 : 9	10
4-7	MENU	1
	SELECT	2
	UP	3
	DOWN	4

\* In this document, terms inside boxes are names of service mode adjustments.

Example **60H-FREQ**

\* CONT 80% is the center click position for the user control.

## II. Deflection System Adjustment

### 1. ADJUSTING THE HORIZONTAL OSCILLATION FREQUENCY

1. Input a 525 monoscope signal.
2. Set :  
CONT..... 80%  
BRT..... 50%
3. Put the unit into service mode.
4. Drop A board IC507 Pin 1 to ground with a  $100\mu/16V$  electrolytic capacitor. (Ground must use CN505 Pin 3.)  
Or plug the H-FREQ tool into CN505.
5. Adjust **60H-FREQ** so that the diagonal lines on the screen become vertical lines. (Fig. 1)
6. Input a 625 monoscope signal.
7. Adjust **50H-FREQ** so that the diagonal lines on the screen become vertical lines. (Fig. 1)

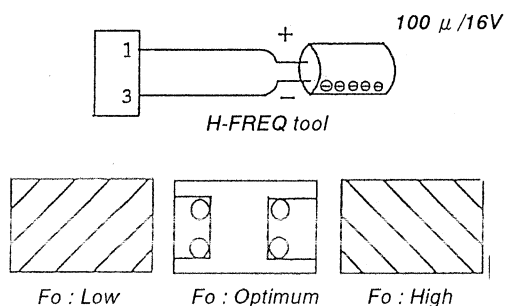


Fig. 1

#### 2-1. H-BLK Adjustment

1. Input a 525 monoscope signal.
2. Set :  
CONT..... 80%  
BRT..... 50%
3. Put the unit into service mode.
4. Observe the anode of D516 or TP300 with the oscilloscope and adjust **H-BLK** to obtain the waveform in Fig. 2.

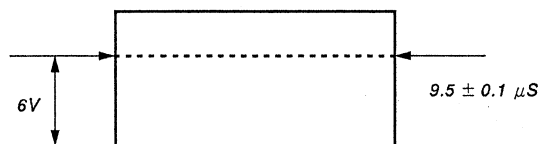


Fig. 2

#### 3-1. PICTURE PHASE Adjustment

1. Input a 525 monoscope signal.
2. Put the unit into under scan mode.
3. Set :  
CONT..... Min.  
BRT..... Max.

4. Put the unit into service mode.
5. Use **U/S H SIZE** to adjust the size of the monoscope white frame to be about 1 cm to the inside of the limits of the effective screen.
6. Turn RV501 (H-CENT) and adjust so that  $B=B'$ .
7. Adjust **60 VIDEO PHASE** so that the signal region comes to the center ( $A=A'$ ) of the deflection region. (Fig. 3)

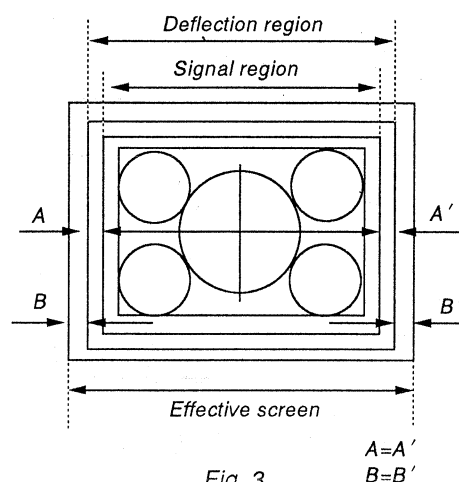


Fig. 3

8. Input a 625 monoscope signal.
9. Adjust **50 VIDEO PHASE** in the same manner.

#### 4-1. V-BLK Adjustment

1. Input a 525 monoscope signal.
2. Put the unit into under scan mode.
3. Set :  
CONT..... Min.  
BRT..... Max.
4. Put the unit into service mode.
5. Adjust **V BLK (60)** so that before 0.5H of the white frame on the top of the monoscope is barely unblocked.
6. End under scan mode and put the unit into Normal 16:9 mode.
7. Adjust **16 : 9 BLK START (60)** and **16 : 9 BLK END (60)** so that the vertical direction frame count is 11.75 for the light emitting section of the screen and at the same time the top and bottom block amounts are the same.  
**Note :** This must be done before the 16 : 9 V-SIZE adjustment.
8. Input a 625 monoscope signal.
9. Adjust **V BLK (50)** in the same manner as in 5 above.
10. Adjust **16 : 9 BLK START (50)** and **16 : 9 BLK END (50)** in the same manner as in 7 and 8 above so that the vertical direction frame count is 11.2 for the light emitting section of the screen and at the same time the top and bottom block amounts are the same.

4-2. V-BLK Adjustment

- 1. Put the unit into service mode.
- 2. Input an adjustment value of 116 for 60-V BLK.
- 3. Input an adjustment value of 66 for 50-V BLK.

5. VERTICAL DEFLECTION SECTION Adjustment

Normal V. Size Standards

		525	625
4 : 3		11.75 ± 0.2 frames	11.2 ± 0.2 frames
16 : 9	14"	154 ± 2mm	←
	20"	217 ± 3mm	←

- 1. Input a 525 monoscope signal.
- 2. Set :  
CONT..... 80%  
BRT..... 50%
- 3. Put the unit into service mode.
- 4. Adjust the size to 12 frames with NOR 60 V SIZE.  
Adjust the vertical linearity with V LIN.  
Adjust the vertical centering with 60 V CENT.  
**Note :** The V.CENT adjustment must be re-evaluated after the V.LIN adjustment.  
Adjust the size to the standard value with NOR 60 V SIZE.
- 5. Put the unit into 16 : 9 mode.
- 6. Adjust in the same manner with 16 : 9 NOR V SIZE (60).
- 7. Put the unit into normal scan mode.
- 8. Input a 625 monoscope signal.
- 9. Roughly adjust NOR 50V SIZE so that the size is 11 frames.  
Adjust the vertical centering with 50 V CENT.  
**Note :** The V.CENT adjustment must be re-evaluated after the V.LIN adjustment.  
Adjust the size to the standard value with NOR 50 V SIZE.
- 10. Put the unit into 16 : 9 mode.
- 11. Adjust in the same manner with 16 : 9 NOR V SIZE (50).

6. HORIZONTAL DEFLECTION SECTION ADJUSTMENT

NORMAL SCAN Adjustment

- 1. Input a 525 monoscope signal.
- 2. Set :  
CONT..... 80%  
BRT..... 50%
- 3. Put the unit into service mode.
- 4. Roughly adjust NOR H SIZE so that the size is 15.75 frames.
- 5. Adjust the horizontal deflection section with NOR PIN AMP, NOR PIN PHASE, NOR U/L PIN, SEXY, V BOW and V ANGLE.  
(While adjusting the pincushion distortion and bow distortion with V-ANGL and BOW, adjust so that the horizontal and vertical of the screen are straight lines.)
- 6. Put the unit into 16 : 9 mode.
- 7. Adjust with 16 : 9 NOR PIN AMP, 16 : 9 NOR PIN PHASE, and 16 : 9 NOR U/L PIN in the

same manner as in Item 5.

Normal H.Size Standards

	525	625
4 : 3	15.75 ± 0.2 frames	15.0 ± 0.2 frames
16 : 9	15.75 ± 0.2 frames	15.0 ± 0.2 frames

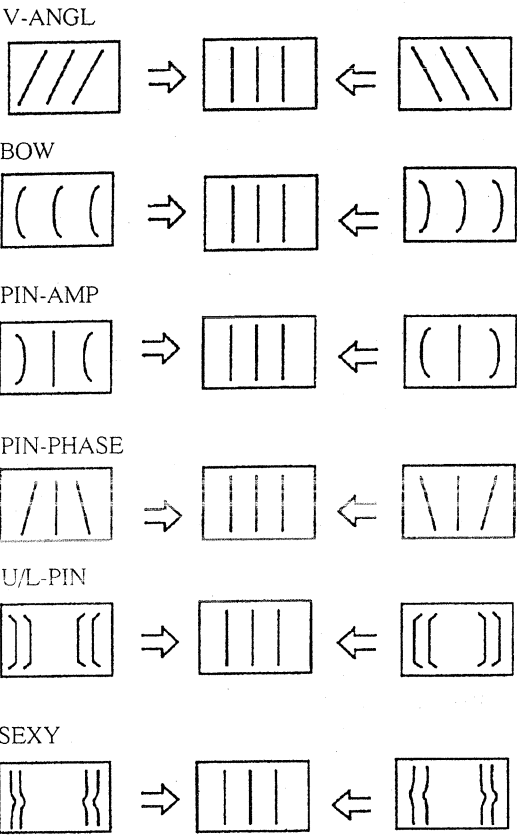


Fig. 4

## 7. HORIZONTAL DEFLECTION SECTION Adjustment (UNDER SCAN adjustment)

Standard value

	525	625
U/S H-SIZE	$364 \pm 3\text{mm}$	←
V-SIZE	$272 \pm 3\text{mm}$	
16 : 9 U/S V-SIZE	$205 \pm 3\text{mm}$	←

1. Input a 525 monoscope signal.
2. Set :  
CONT..... 80%  
BRT.....50%
3. Put the unit into U/S mode.
4. Put the unit into service mode.
5. Adjust **U/S V SIZE (60)** so that the under-scan vertical size meets the standard.
6. Adjust **U/S H SIZE** so that the under-scan horizontal size meets the standard.
7. Adjust **U/S PIN AMP** and **U/S PIN PHASE**.  
(The tracking must be adjusted for 5, 6 and 7.)
8. After adjustment, the four corners of the monoscope white frame must be within the effective screen.
9. Put the unit into 16 : 9 mode.
10. Adjust with **16 : 9 U/S V SIZE (60)**, **16 : 9 U/S PIN AMP**, **16 : 9 U/S PIN PHASE** in the same manner as in Item 5, 7.
11. End 16 : 9 mode.
12. Input a 625 monoscope signal.
13. Adjust **U/S V SIZE (50)** in the same manner as Item 5.
14. Put the unit into 16 : 9 mode.
15. Adjust **16 : 9 U/S V SIZE (50)** in the same manner as Item 10.

**Note :** If there is no leeway in the adjustment timing for 5 vertical deflection section adjustment and 6, 7 horizontal deflection section adjustment, after verifying that each section can be adjusted to operate normally, it is also possible to input the standard adjustment values.

## 8. H/V DELAY Adjustment

1. H-DELAY adjustment
  - 1) Input a 525 monoscope signal.
  - 2) Set :  
CONT..... 80%  
BRT.....50%
  - 3) Put the unit into H/V DELAY mode.
  - 4) Put the unit into service mode.
  - 5) Connect the oscilloscope probe to IC503 Pin 7, then adjust **H DELAY** so that the waveform is as in Fig. 5.

## 2. V-DELAY Adjustment

- 1) Input a 525 monoscope signal.
  - 2) Set :  
CONT..... 80%  
BRT.....50%
  - 3) Put the unit into H/V DELAY mode.
  - 4) Put the unit into service mode.
  - 5) Connect the oscilloscope probe to IC502 Pin 7, then adjust **V DELAY** so that the waveform is as in Fig. 6.
3. Picture verification  
Verify that the picture is as in Fig. 7.

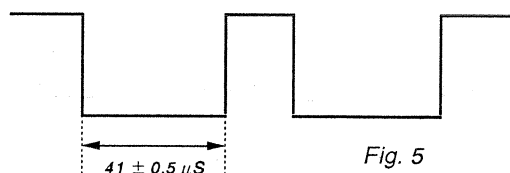


Fig. 5

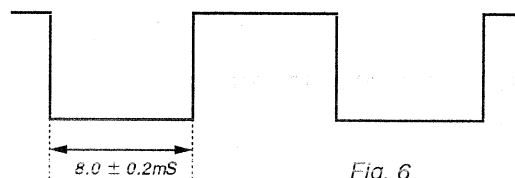
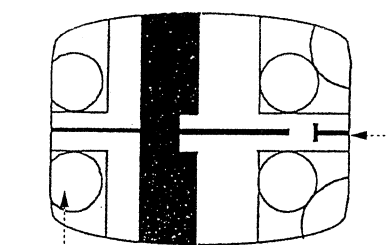


Fig. 6



The small circle is slightly broken.

The picture is pretty much at the center.

Fig. 7

9. OSD POSITION Adjustment

- 1. Input a 525 color bar signal.
- 2. Connect the oscilloscope probes to TP300 (H-BLK) and IC104 Pin 14.
- 3. Adjust **OSD POSITION** so that the gap between the rising edge of the H-BLK waveform and the right edge character (the right edge of the " " for service mode **OSD POSITION**) is :  $57 \mu\text{S} \pm 0.2 \mu\text{S}$

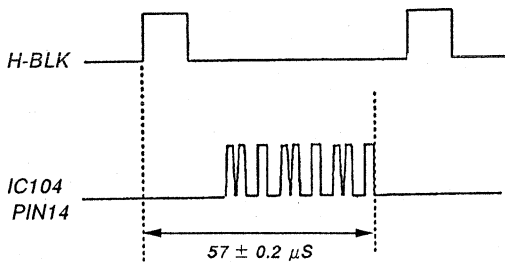


Fig. 8

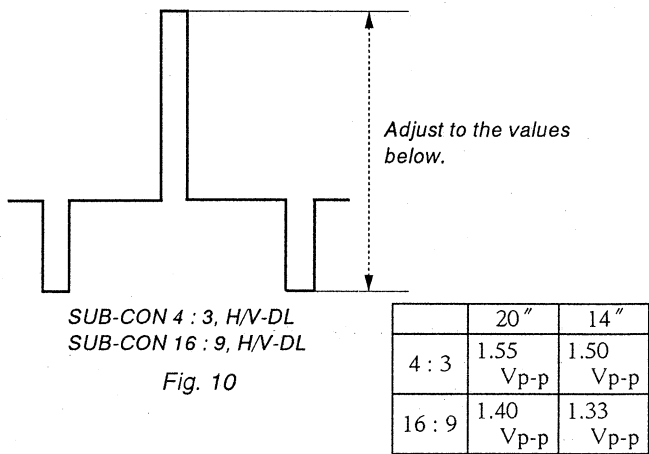
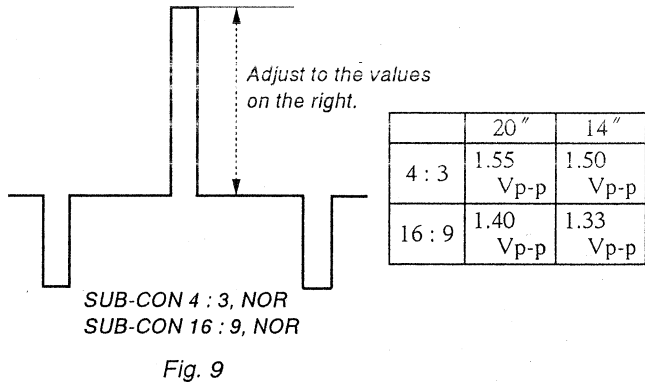
10. WRITING THE ADJUSTMENT

- 1. Write the adjustment results into memory.  
**Note :** If you cut off the power before writing, the results of your adjustments are all lost.

III. SIGNAL SYSTEM ADJUSTMENT

1. NORMAL AND H/V DL SUB CON ADJUSTMENT

- 1. Input a vertical white line signal.  
**Note :** Use a vertical white line signal (525 no burst, H width  $3 \mu\text{S}$ , 100IRE).
- 2. Set :  
CONT..... 80%  
BRT..... 50%
- 3. Connect the oscilloscope probe to A board CN401 Pin 3.
- 4. Put the unit into service mode.
- 5. Provisionally input an adjustment value of 69 for SUB BRT.
- 6. Adjust the pedestal or the distance between the sync tip and white with **SUB CON (4 : 3 NOR)**, **SUB CON (4 : 3 H/V DELAY)**, **SUB CON (16 : 9 NOR)**, and **SUB CON (16 : 9 H/V DELAY)**.  
SUB CON (4 : 3 NOR).  
SUB CON (16 : 9 NOR) } (Fig. 9)  
SUB CON (4 : 3 H/V DELAY)  
SUB CON (16 : 9 H/V DELAY) } (Fig. 10).



## 2-1. SUB PHASE Adjustment

1. Input a component color bar (R-Y) and EXT SYNC (Beta 0 level signal).
2. Put the unit into Ext Sync mode.
3. Connect the oscilloscope probe to IC404 Pin 30 or TP402.
4. Put the unit into service mode.
5. Adjust **SUB PHASE** to minimize the output waveform (15 mVp-p max.) (Fig. 11)

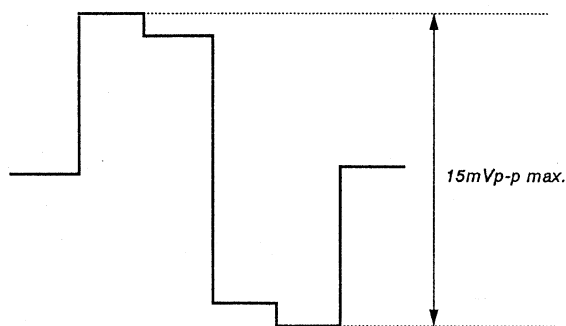
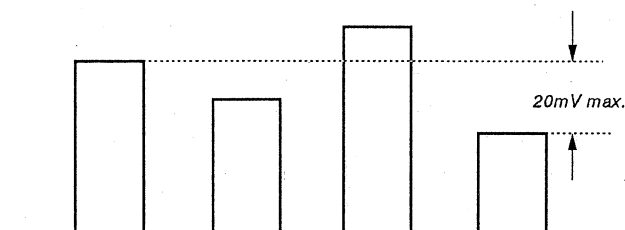


Fig. 11

## 3-1. SUB CHROMA Adjustment

1. Input a component color bar (R-Y, Y, B-Y). (Beta 0 level signal).
2. From the menu, make the Component Level Beta 0.
3. Connect the oscilloscope probe to IC404 Pin 30 or TP402.
4. Put the unit into service mode.
5. Using **SUB CHROMA NORMAL**, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 12)



Adjust so that the levels of the first peak and the fourth peak are the same.

Fig. 12

## 4. R-Y LEVEL ADJUSTMENT

1. Input a component color bar (R-Y, Y, B-Y). (Beta 0 level signal).
2. From the menu, make the Component Level Beta 0.
3. Connect the oscilloscope probe to IC404 Pin 41 or TP401.
4. Put the unit into service mode.
5. Using **R-Y LEVEL COMPONENT**, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 13)

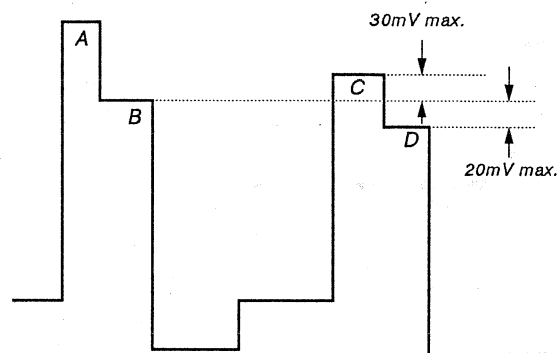


Fig. 13

Adjust so that B=D above (20 mV max.) Check that the difference between D and C is no greater than 30 mV

## 5. SUB CHROMA N10/SMPTE Adjustment

1. Input a component color bar (R-Y, Y, B-Y). (SMPTE level signal).
2. From the menu, make the Component Level N10/SMPTE.
3. Connect the oscilloscope probe to IC404 Pin 30 or TP402.
4. Put the unit into service mode.
5. In the same manner as in 4-5, adjust **SUB CHROMA N10/SMPTE**.

## 6. BURST GATE PULSE WIDTH Adjustment

1. Input an NTSC color bar.
2. Connect the oscilloscope probes to TP301 (COMP-SYNC) and Q363 or IC305 Pin 1. (Be careful! IC305 Pin 1 is a high-impedance line.)
3. Put the unit into service mode.
4. Adjust **BGP WIDTH** so that the output waveform has the relationship shown in Fig. 14.

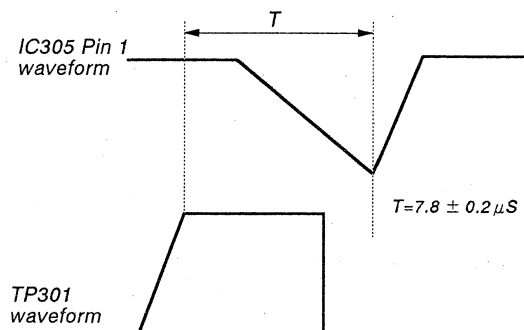


Fig. 14

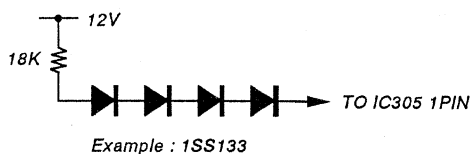
## 7. VXO Adjustment

### 1. X'tal 358

- 1) Input an NTSC color bar.
- 2) Connect the frequency counter to IC305 Pin 21.
- 3) Put the unit into service mode.
- 4) Connect the circuit on the right to IC305 Pin 1.
- 5) Adjust **CRYSTAL 358** so that the counter reading meets the standard below. (You can also just adjust for where the color flicker stops.)

#### X'tal 358

Standard level  $3.579545 \pm 20\text{Hz}$



(For connecting to Pin 1, have the four diodes as close to Pin 1 as possible to reduce the length of the wires.)

### 2. X'tal 443

- 1) Input a 443 NTSC color bar.
- 2) Connect the frequency counter to IC305 Pin 21.
- 3) Put the unit into service mode.
- 4) Connect to IC305 Pin 1 in the same manner as in 1-4).
- 5) Adjust Crystal 443 in the same manner as in 1-5).

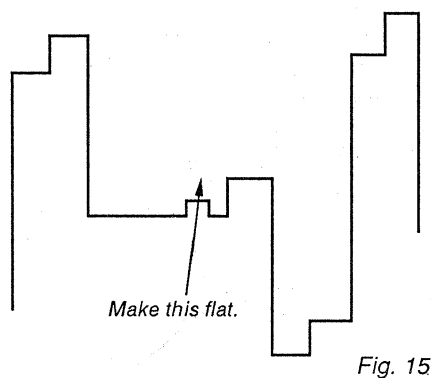
#### X'tal 443

Standard level  $4.433619 \pm 20\text{Hz}$

## 8. NTSC COLOR DEMODULATION Adjustment

### 1. NT 358 PHASE (NORMAL)

- 1) Input an NTSC color bar.
- 2) Connect the oscilloscope probe to TP306.
- 3) Put the unit into service mode.
- 4) Adjust PHASE NTSC 358 NOR so that the output waveform burst section is a straight line. (Fig. 15)



### 2. NT358 PHASE (ACC OFF)

- 1) Switch ACC Off with the menu.
- 2) Adjust in the same manner as in 8.-1 above, but adjust with **PHASE NTSC 358 ACC OFF**. (Fig. 15)

### 3. NT358 B-Y PHASE

The phase adjustment must be carried out before the chroma adjustment.

- 1) Input an NTSC color bar.  
(Input only the R-Y component. Have B-Y and Y off.)
- 2) Connect the oscilloscope probe to TP305.
- 3) Put the unit into service mode.
- 4) Adjust **B-Y PHASE NTSC 358** so that the color components form a straight line.

### 4. NT358 CHROMA (NORMAL)

- 1) Input an NTSC color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 3) Put the unit into service mode.
- 4) Using **CHROMA NTSC 358 NOR**, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 16)

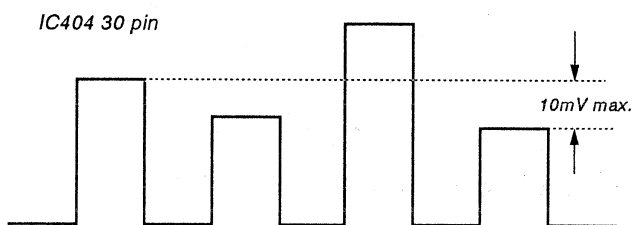


Fig. 16

Adjust so that the levels of the first peak and the fourth peak are the same.

### 5. NT 358 CHROMA (ACC OFF)

- 1) Switch ACC Off with the menu.
- 2) Adjust **CHROMA NTSC 358 ACC OFF** in the same manner as 8.-4 above. (Fig. 16)

### 6. NTSC 358 R-Y LEVEL

- 1) Input an NTSC358 color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 41 or TP401.
- 3) Put the unit into service mode.
- 4) Using **R-Y LEVEL NTSC 358**, adjust so that the tops of the waveform line up as in the diagram below. (Fig. 17)

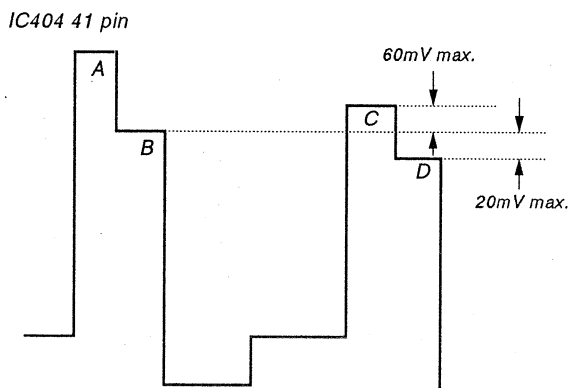


Fig. 17

Adjust so that B=D above (20 mV max.) Check that the difference between B and C is no greater than 60 mV.

# 7. NTSC 443 PHASE (NORMAL)

- 1) Input an NTSC 443 color bar.
- 2) Connect the oscilloscope probe to TP306.
- 3) Put the unit into H/V delay mode.
- 4) Put the unit into service mode.
- 5) Adjust **PHASE NTSC 443 NOR** so that the output waveform burst section is a straight line. (Fig. 18)

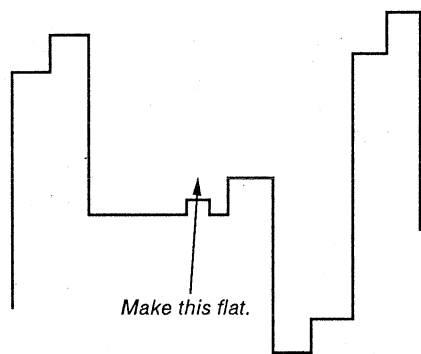


Fig. 18

# 8. NTSC 443 PHASE (ACC OFF)

- 1) Switch ACC Off with the menu.
- 2) Adjust **PHASE NTSC 443 ACC OFF** in the same manner as in 7-5). above. (Fig. 20)

# 9. NTSC 443 B-Y PHASE

## NTSC 443 CHROMA NOR

- 1) Input an NTSC 443 color bar.
- 2) Connect the oscilloscope probe to TP402.
- 3) Put the unit into service mode.
- 4) Adjust **B-Y PHASE NTSC 443** and **CHROMA NTSC 443 NOR** so that the tracking is normal and the tops of the waveform line up. (Fig. 19)

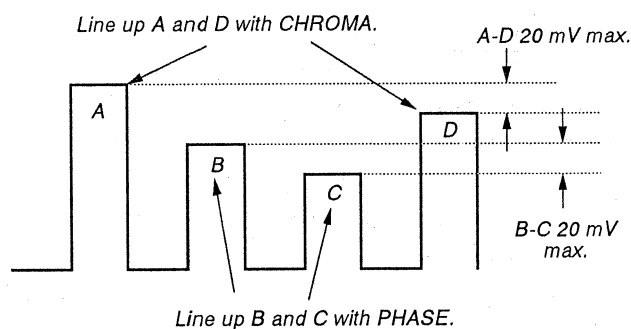


Fig. 19

# 10. NTSC 443 CHROMA (ACC OFF)

- 1) Switch ACC Off with the menu.
- 2) Adjust **CHROMA NTSC 443 ACC OFF** in the same manner as 9-4). (Fig. 22)

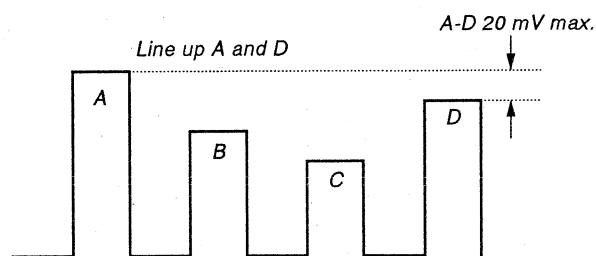


Fig. 20

# 11. NTSC 443 R-Y LEVEL

- 1) Input an NTSC 443 color bar.
- 2) Connect the oscilloscope probe to TP401.
- 3) Put the unit into service mode.
- 4) Adjust **R-Y LEVEL NTSC 443** in the same manner as 6-4). (Fig. 17)

# 12. PAL PHASE (NORMAL)

- 1) Input a PAL SP color bar.
- 2) Connect the oscilloscope probe to TP306.
- 3) Put the unit into service mode.
- 4) Adjust **PHASE PAL NOR** so that the B-Y anti-PAL signal waveform is 0. (Fig. 21)

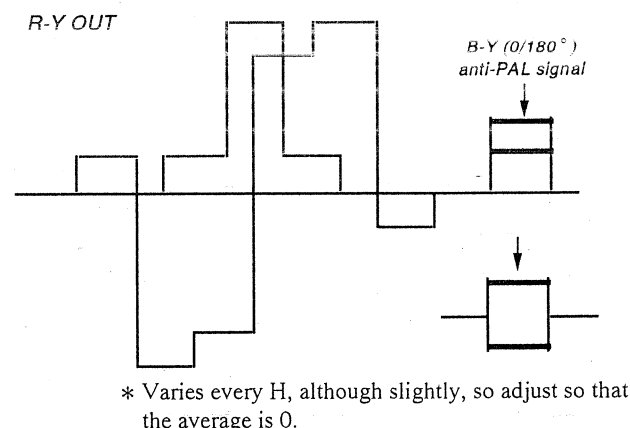


Fig. 21

# 13. PLL PHASE (ACC OFF)

- 1) Switch ACC Off with the menu.
- 2) Adjust **PHASE PAL ACC OFF** in the same manner as 12-4).

14. PAL B-Y PHASE

- 1) Input a PAL SP color bar.
- 2) Connect the oscilloscope probe to TP305.
- 3) Put the unit into service mode.
- 4) Adjust **B-Y PHASE PAL** so that the B-Y anti-PAL signal waveform is 0. (Fig. 22)

(R-Y OUT)

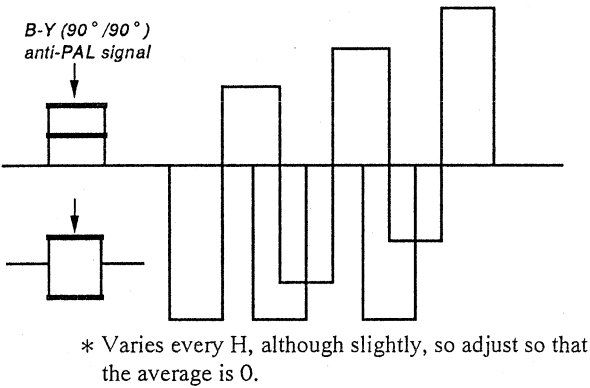


Fig. 22

15. PAL CHROMA (NORMAL)

- 1) Input a PAL color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 3) Put the unit into service mode.
- 4) Adjust **CHROMA PAL NOR** so that the tops of the waveform line up. (Fig. 23)

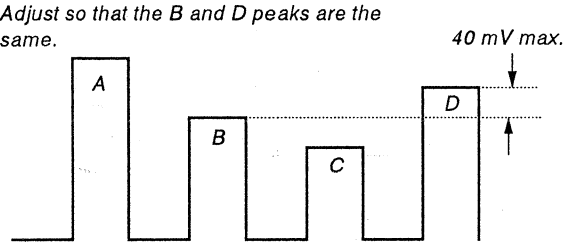


Fig. 23

16. PAL CHROMA (ACC OFF)

- 1) Switch ACC Off with the menu.
- 2) Adjust **CHROMA PAL ACC OFF** in the same manner as 15.-4). (Fig. 23)

17. PAL R-Y LEVEL

- 1) Input a PAL color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 41 or TP401.
- 3) Put the unit into service mode.
- 4) Adjust **R-Y LEVEL PAL** so that the tops of the waveform line up as in the diagram below. (Fig. 24)

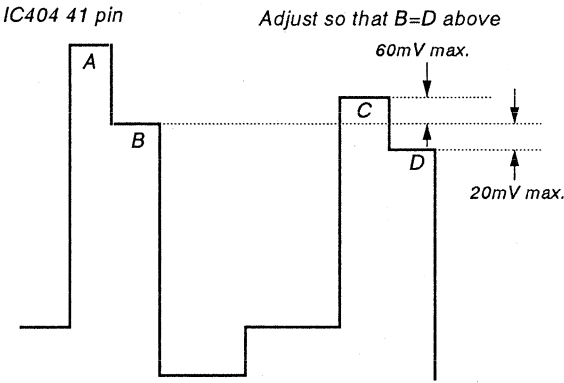


Fig. 24

9. SECAM Adjustmnet

- \* This must be done after the deflection adjustment.
- Varies with H-FREQ, H-BLK, VIDEO-PHASE, ANGLE, BOW, H-DELAY, etc.

1. HP EIDTH (NORMAL) ADJUSMTNET

The board adjustment in 9.-1. is a rough adjustment and this may also be managed with the IC317 Pin 10 pulse width.

- 1) Input a SECAM color bar.
- 2) Put the unit into under scan mode.
- 3) Put the unit into service mode.
- 4) Adjust **HP WIDTH NOR** so that the color of the color section at the top left of the screen almost disappears.

2. HP POSITIOM ADJUSMTNET

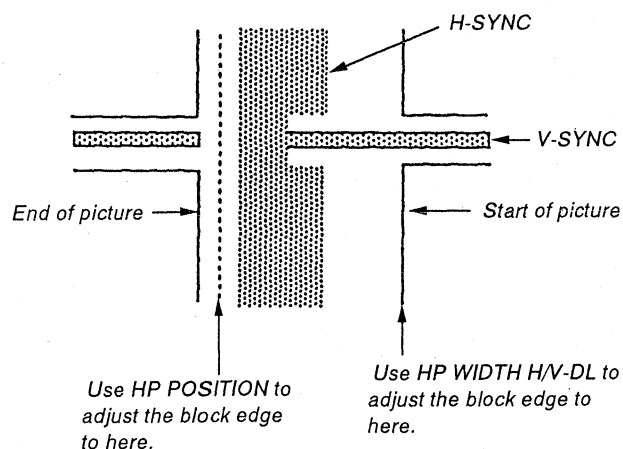
9.-2. is the same as above. This adjustment can be managed with the phase relationship between the start of the pulse at IC317 Pin 10 and the input video signal.

- 1) Input a SECAM color bar.
- 2) Put the unit into H/V delay mode.
- 3) Put the unit into service mode.
- 4) Adjust **HP POSITION** as in the diagram on the right.

3. HP WIDTH (H/V -DL) ADJUSMTNET

- 1) Input a SECAM color bar.
- 2) Put the unit into H/V delay mode.
- 3) Put the unit into service mode.

- 4) Adjust HP WIDTH H/V DELAY as in the diagram below.  
**Note :** Check the HP POSITION and if it is off, repeat 2 and 3.



#### 4. SECAM COL BALANCE

- 1) Input a SECAM color bar.
- 2) Connect the oscilloscope probe to TP306.
- 3) Put the unit into service mode.
- 4) Adjust **SECAM COLOR BALANCE R-Y** so that the non-color section forms a straight line.
- 5) Connect the oscilloscope probe to TP305.
- 6) Adjust **SECAM COLOR BALANCE B-Y** so that the non-color section forms a straight line.

#### 5. SECAM CHROMA

- 1) Input a SECAM color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 30 or TP402.
- 3) Put the unit into service mode.
- 4) Adjust **CHROMA SECAM** so that the tops of the waveform line up as in the diagram below. (Fig. 25)

IC404 30 pin

Adjust so that the B and D peaks are the same.

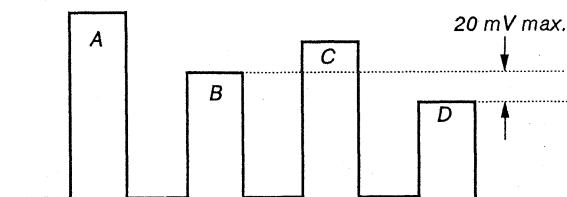
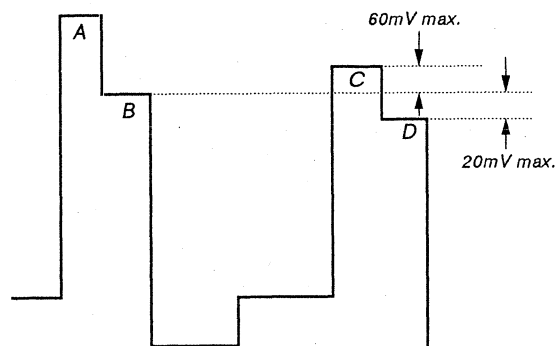


Fig. 25

#### 6. SECAM R-Y LEVEL

- 1) Input a SECAM color bar.
- 2) Connect the oscilloscope probe to IC404 Pin 41 or TP401.
- 3) Put the unit into service mode.
- 4) Adjust **R-Y LEVE SECAM** so that the tops of the waveform line up as in the diagram below. (Fig. 26)

IC404 41 pin



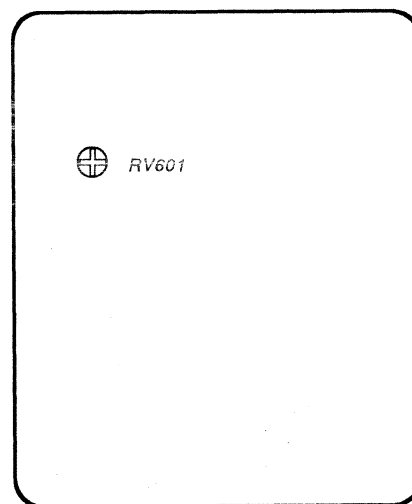
Adjust so that B=D above Fig. 26

### 10. Writing the adjustment results

1. Write the adjustment results into memory.

### 5-2. G BOARD ADJUSTMENT

G BOARD – COMPONENT SIDE –



#### 1. Checking the output lines

- 1) Input a color bar signal.
- 2) Adjust RV601 so that the +B voltage is  $115 \pm 0.1$  V.
- 3) Check that the output lines meet the standards below.

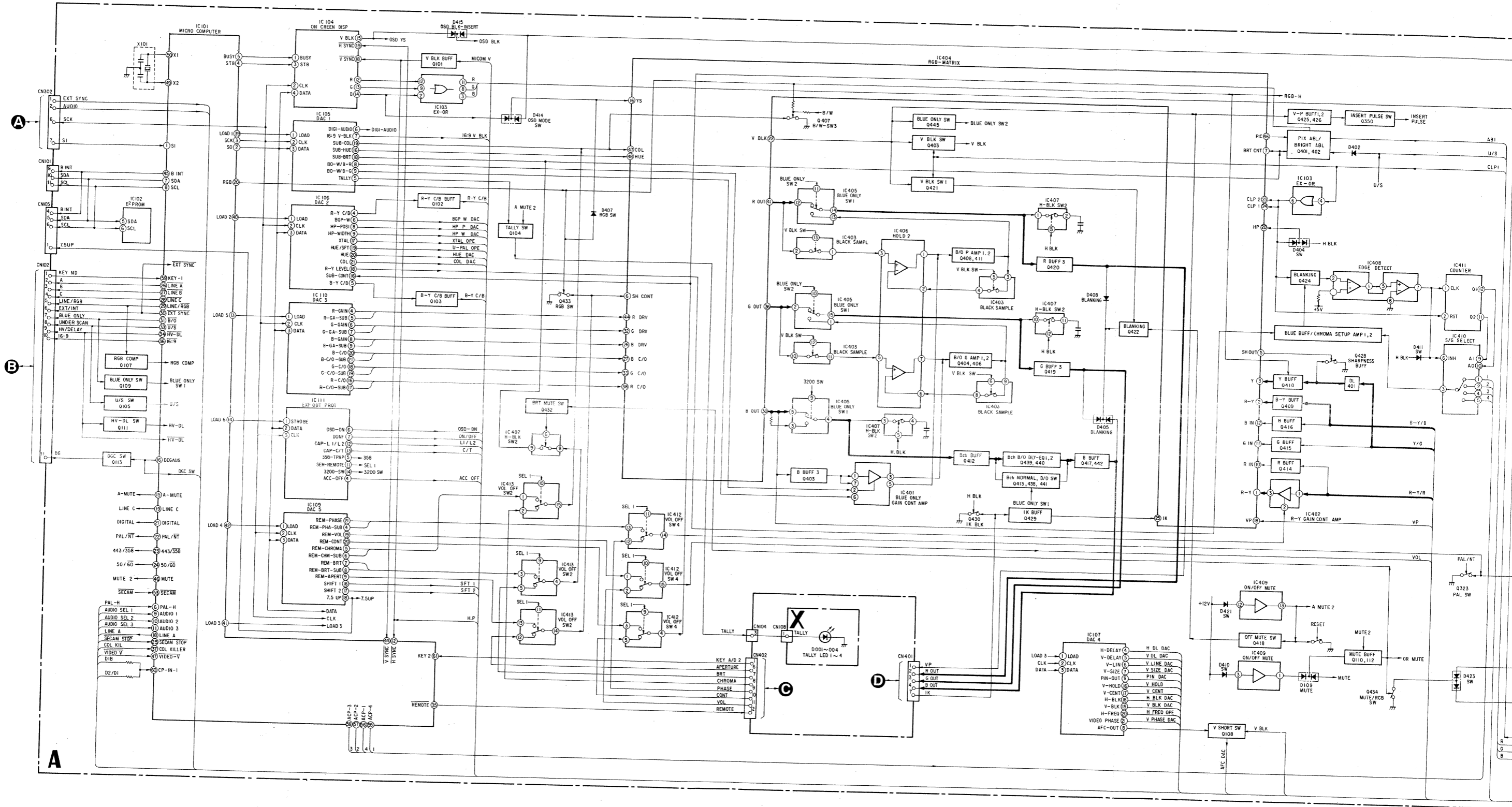
15V	$16.0 \pm 1.0V$
5V(A)	$5.0 \pm 0.3V$
5V(B)	$5.0 \pm 0.5V$
7V	$7.2 \pm 0.5V$
- 15V	$- 16.3 \pm 1.0V$

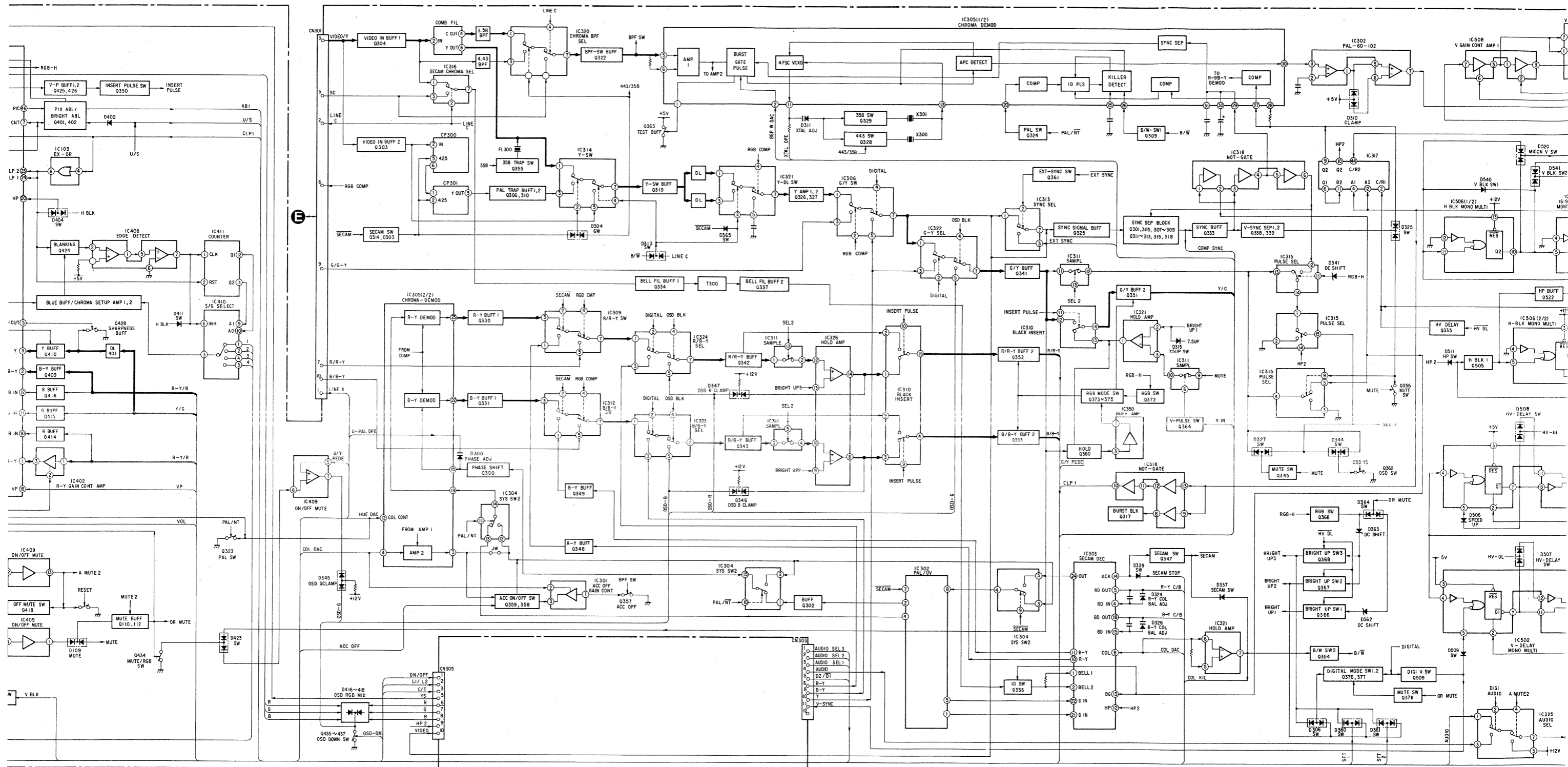
MEMO

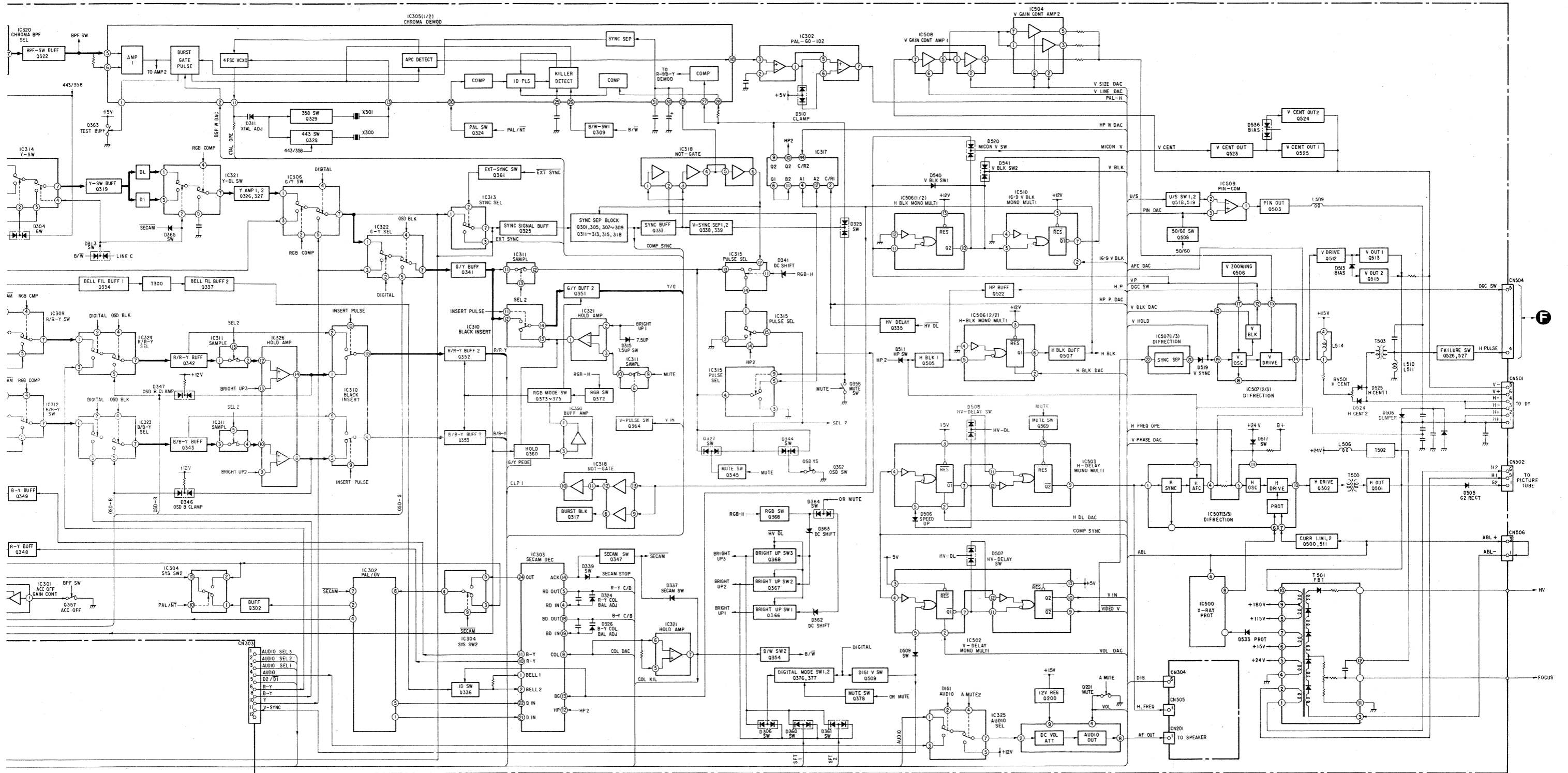
Handwriting practice lines consisting of 30 horizontal dotted lines.

## SECTION 6 DIAGRAMS

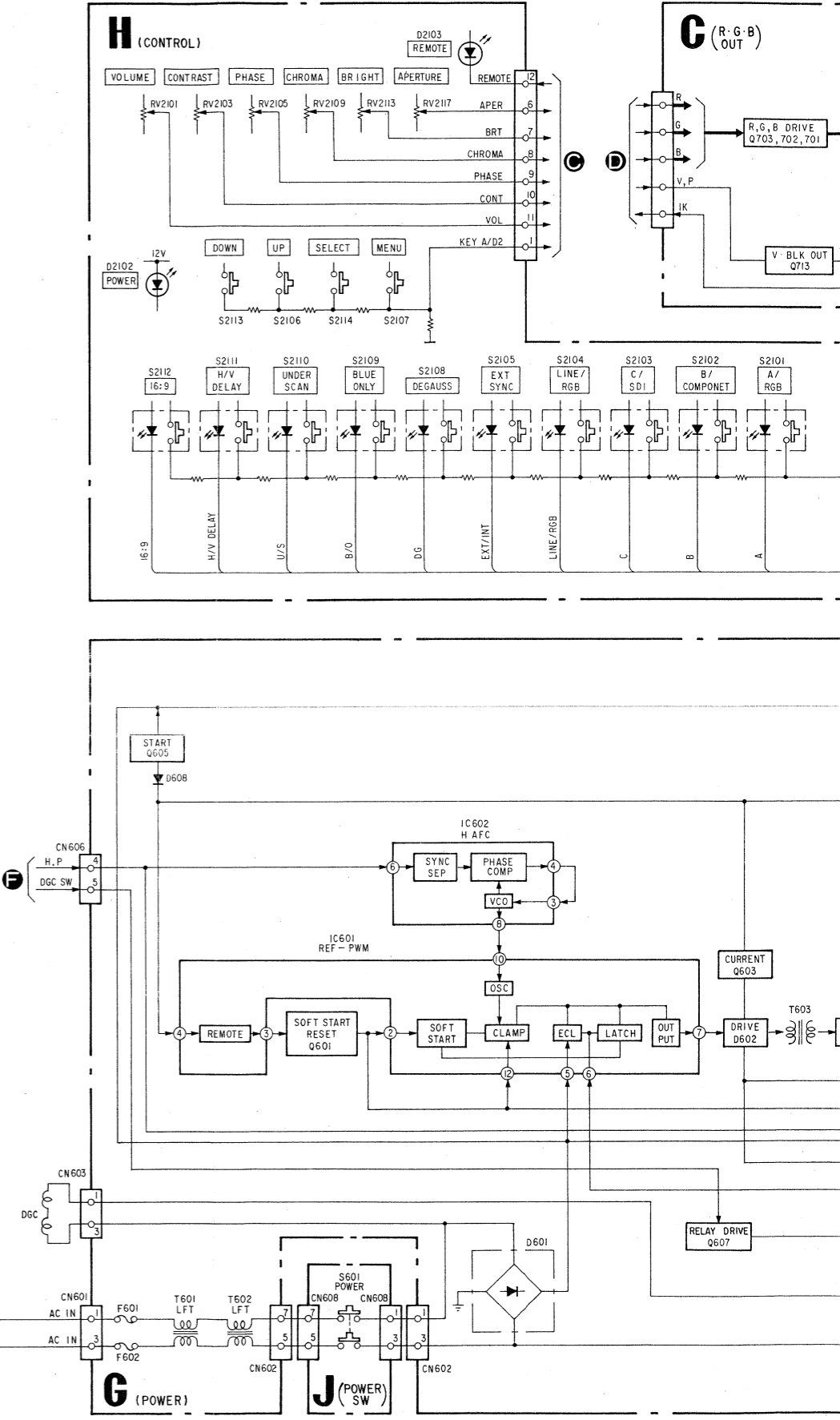
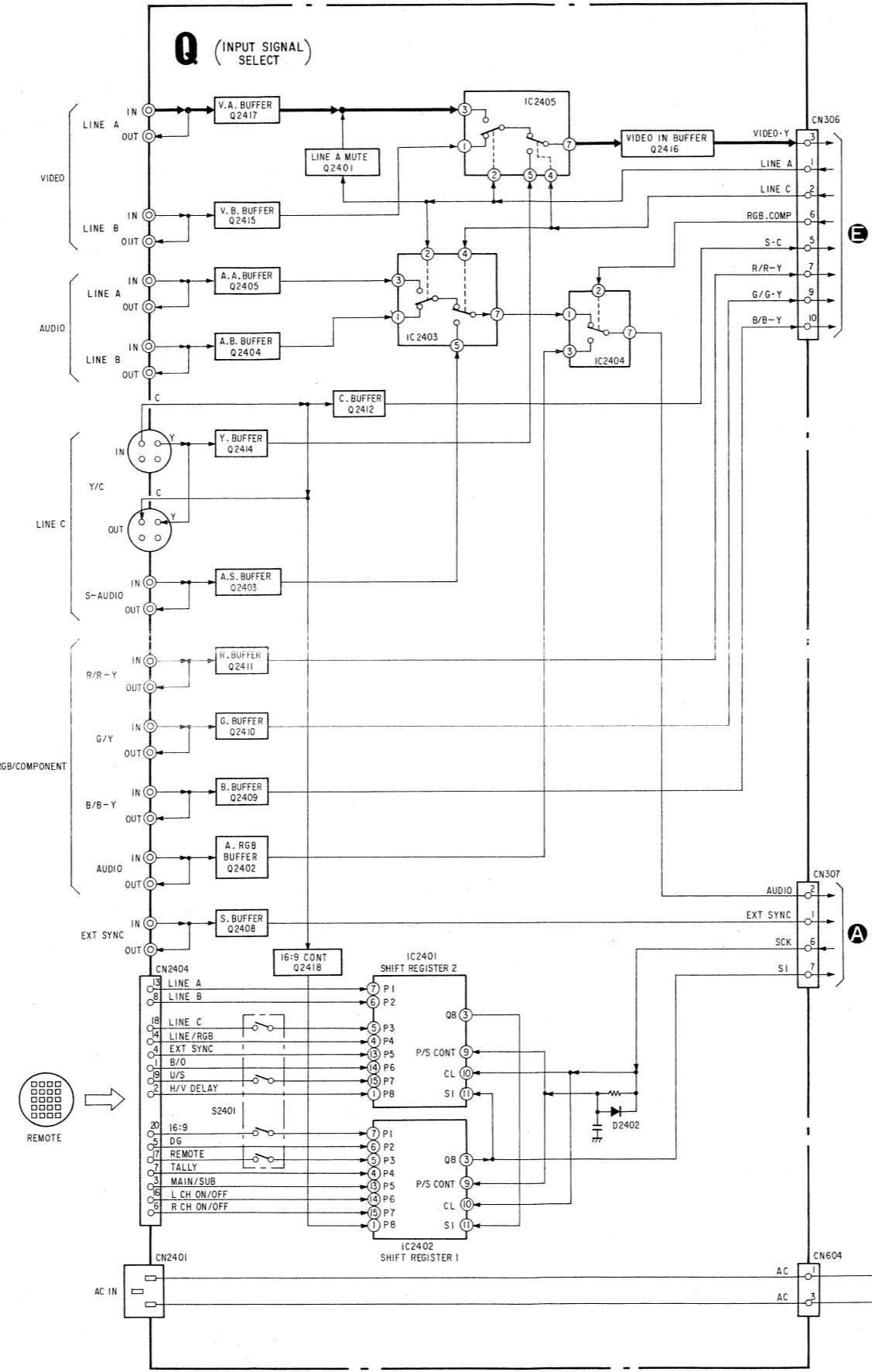
## 6-1. BLOCK DIAGRAMS (1)

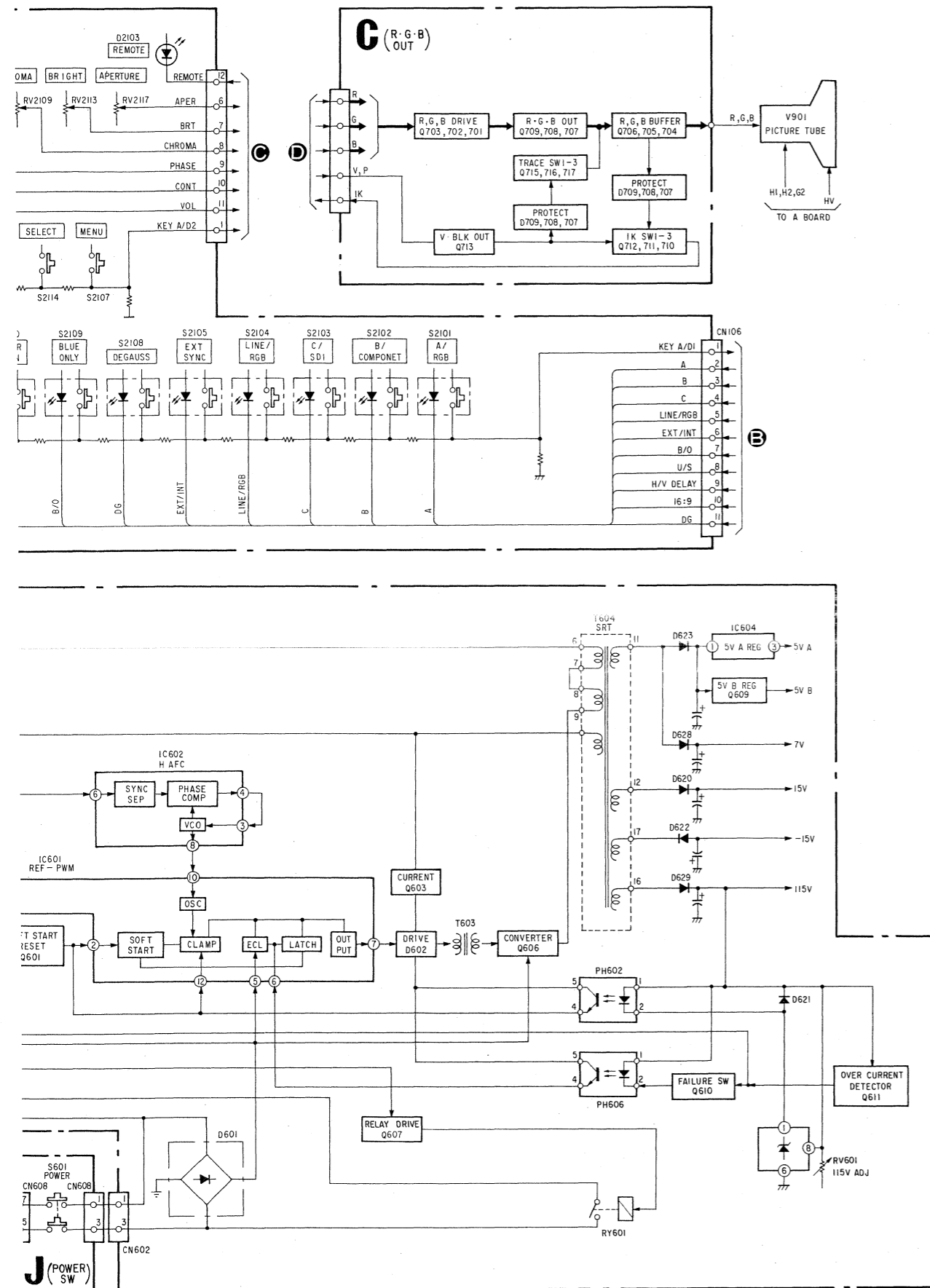






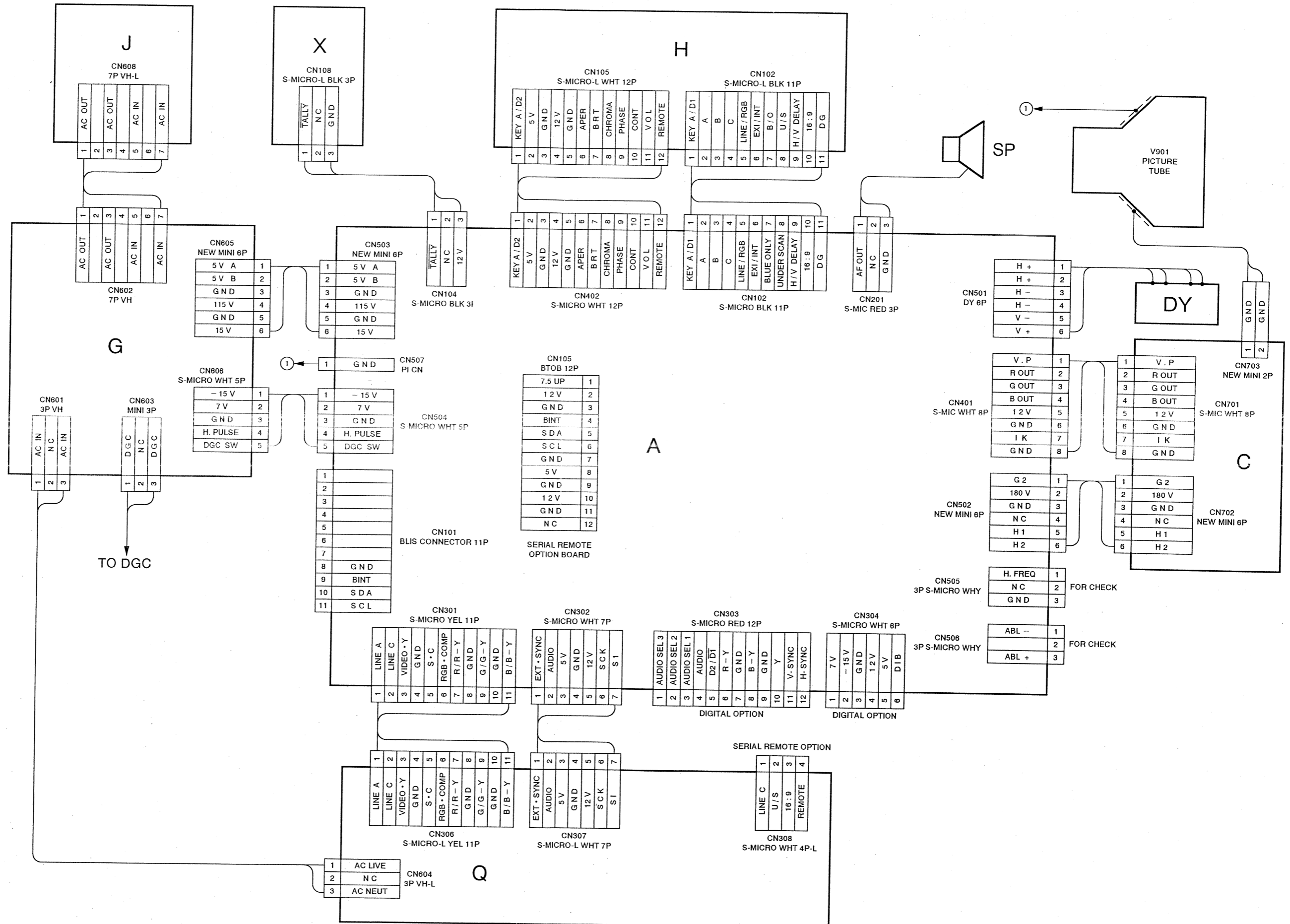
BLOCK DIAGRAMS (2)



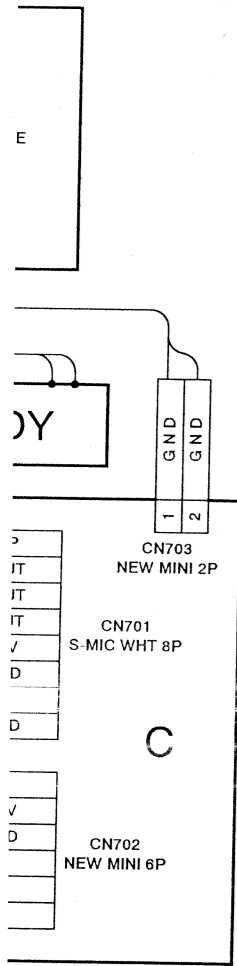




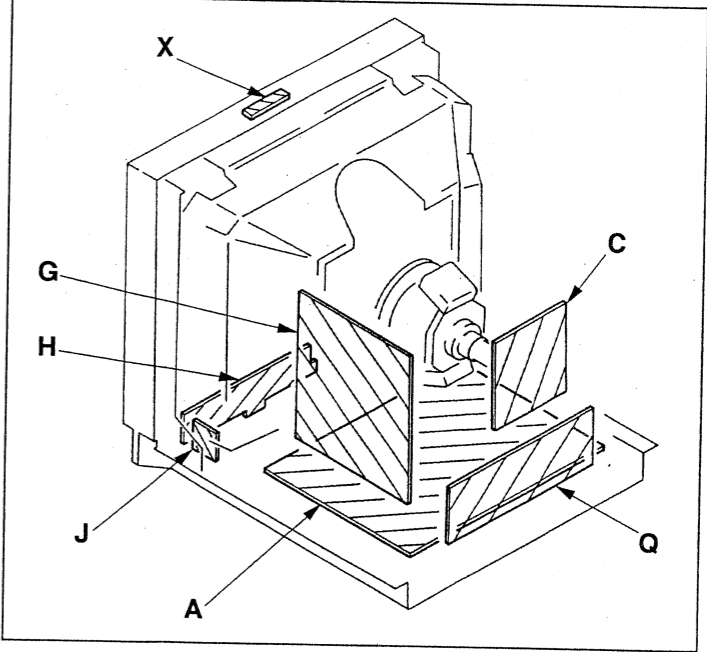
## 6-2. FRAME SCHEMATIC DIAGRAM



MEMO



6-3. CIRCUIT BOARDS LOCATION



6-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\mu\text{F}$ :  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm  
Rating electrical power  $\frac{1}{4}$  W

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved. (Refer to R690 adjust on Page 21 and 22.)
- When replacing the part in below table, be sure to perform the related adjustment.

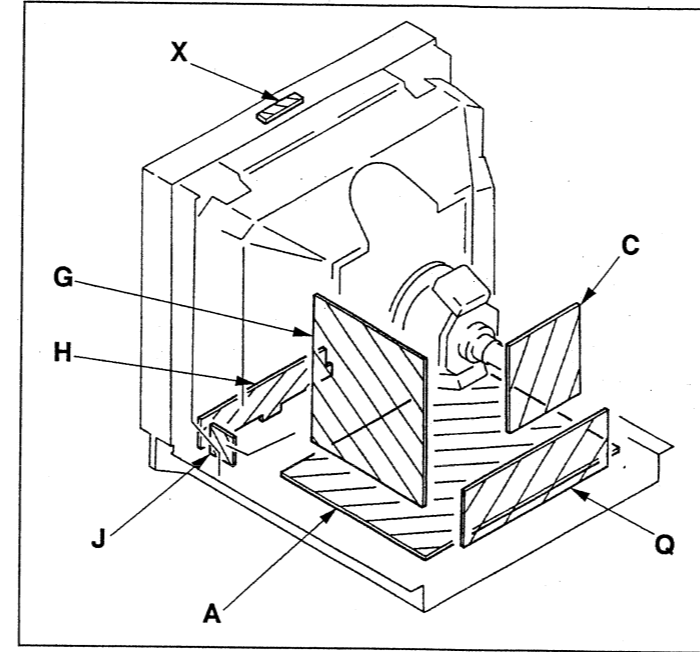
Part replaced ()	Adjustment ()
C506, C512, C513, C523, C549, C592, D501, D533, IC500, IC507, Q500, Q511, R506, R508, R515, R516, R517, R518, R519, R551, R1535, R1536, R1537, R1560, T501 ..... (A BOARD) C603, IC602 ..... (G BOARD)	R1535, R1536 (HOLD-DOWN)

- All voltages are in V.
- Voltage are dc with respect to gr.
- Readings are taken with a color.
- Voltage variations may be not tolerances.
- : B + bus.
- : B - bus.
- : signal path.
- No mark : with PAL colour-bar signal voltage.
- For the respective voltage ratings S-VIDEO, and ANALOG RGB mo

Reference information

RESISTOR	: RN	METAL FIL
	: RC	SOLID
	: FPRD	NONFLAM
	: FUSE	NONFLAM
	: RW	NONFLAM
	: RS	NONFLAM
	: RB	NONFLAM
COIL	: LF-8L	MICRO IN
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROF
	: PT	MYLAR
	: MPS	METALIZE
	: MPP	METALIZE
	: ALB	BIPOLAR
	: ALT	HIGH TEM
	: ALR	HIGH RIPP

6-3. CIRCUIT BOARDS LOCATION



6-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm  
Rating electrical power  $\frac{1}{4}$  W

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved. (Refer to R690 adjust on Page 21 and 22.)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced ()	Adjustment ()
C506, C512, C513, C523, C549, C592, D501, D533, IC500, IC507, Q500, Q511, R506, R508, R515, R516, R517, R518, R519, R551, R1535, R1536, R1537, R1560, T501 ..... (A BOARD) C603, IC602 ..... (G BOARD)	R1535, R1536 (HOLD-DOWN)

- All voltages are in V.
- Voltage are dc with respect to ground unless otherwise noted.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- : B + bus.
- : B - bus.
- : signal path.
- No mark : with PAL colour-bar signal received or common voltage.
- For the respective voltage ratings in SECAM, NTSC 3.58, NTSC 4.43, S-VIDEO, and ANALOG RGB modes, see the table

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

A

MICON, RGB-MATRIX, DAC,  
ON SCREEN DISPLAY, ON/OFF MUTE,  
VOL OFF SW, BLACK-SAMPLING, RGB SW

[

CHROMA DEMOD, SECAM CHROMA SELECT, SYSTEM SW,  
SYNC SELECT, B/B-Y SW, R/R-Y SW, G/Y SW,  
AUDIO SELECT, SECAM DECORDER, HOLD AMP

]

[

H/V OUT, DEFLECTION SYSTEM,  
AUDIO OUT

]

Note :

- : Pattern from the
- : Pattern of the rea

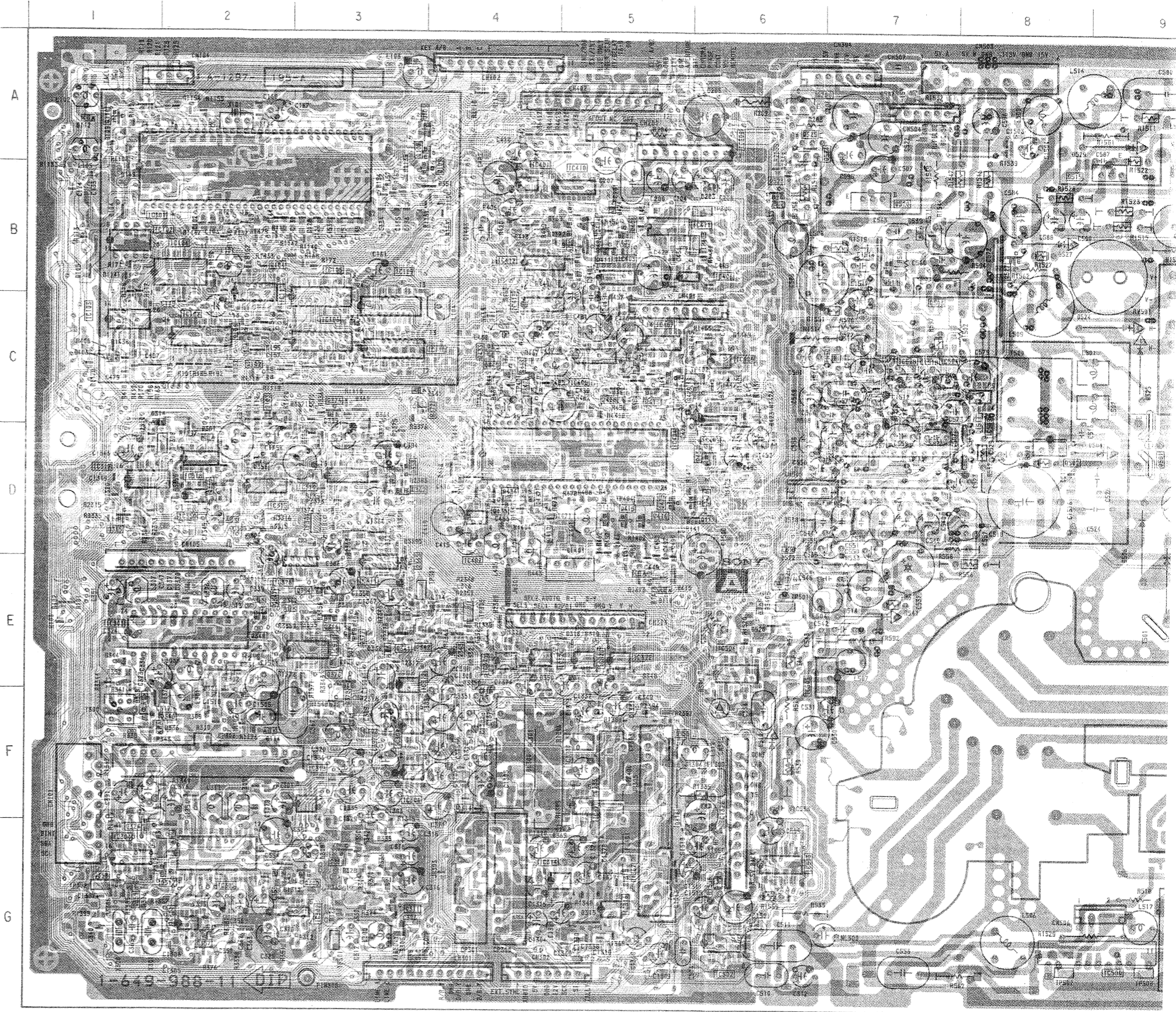
- A BOARD - (Component Side)

COMPONENT SIDE

IC		IC503	G-6	Q410	D-4	D332	E-3
IC101	B-2	IC504	C-7	Q411	B-5	D335	F-1
IC102	B-1	IC505	E-6	Q412	C-5	D336	F-1
IC103	C-1	IC506	E-6	Q413	C-5	D338	E-3
IC104	B-1	IC507	D-7	Q414	D-5	D339	E-2
IC105	B-3	IC508	C-7	Q415	D-5	D341	C-3
IC106	C-3	IC509	C-7	Q416	D-5	D348	E-5
IC107	C-2	IC510	E-2	Q425	D-5	D349	E-5
IC109	C-3	TRANSISTOR		Q426	D-5	D350	E-4
IC110	C-3			Q429	C-5	D351	B-3
IC111	B-2	Q102	C-2	Q430	D-5	D352	E-4
IC200	A-5	Q103	C-2	Q432	C-5	D360	C-3
IC301	G-2	Q104	B-2	Q433	C-4	D361	C-3
IC302	G-2	Q105	A-3	Q435	D-4	D362	E-2
IC303	E-1	Q107	A-3	Q436	D-4	D365	G-4
IC304	G-1	Q108	C-2	Q437	D-4	D380	D-2
IC305	G-2	Q109	B-3	Q438	C-5	D381	D-2
IC306	F-3	Q110	A-1	Q440	C-4	D406	C-1
IC309	F-3	Q112	D-5	Q441	C-4	D413	E-5
IC310	D-3	Q200	A-6	Q442	C-4	D414	D-4
IC311	E-3	Q300	G-2	Q445	C-5	D415	E-5
IC312	E-3	Q308	G-3	Q501	D-9	D416	D-4
IC313	F-2	Q311	G-3	Q502	D-8	D417	D-4
IC314	G-4	Q314	F-4	Q503	B-7	D418	D-3
IC315	D-2	Q316	F-5	Q512	A-10	D423	C-6
IC316	G-5	Q324	C-1	Q513	A-9	D424	B-5
IC317	D-1	Q335	D-1	Q515	B-8	D502	E-9
IC318	D-2	Q341	E-3	Q518	B-7	D504	D-8
IC320	F-5	Q342	E-3	Q520	B-7	D505	E-10
IC321	F-5	Q343	E-4	Q523	B-6	D506	D-9
IC322	E-5	Q346	F-1	Q524	A-6	D510	F-6
IC323	E-5	Q347	E-2	Q525	A-6	D512	D-9
IC324	E-4	Q348	E-2	Q527	B-8	D514	E-7
IC325	E-4	Q353	D-3	DIODE		D515	F-10
IC326	E-2	Q354	E-3			D520	E-6
IC350	D-2	Q355	F-5	D104	B-1	D522	D-6
IC401	B-4	Q356	D-2	D105	B-1	D524	C-8
IC402	D-4	Q357	G-2	D109	A-1	D525	C-9
IC403	B-5	Q358	G-1	D110	E-5	D527	B-8
IC404	D-4	Q359	G-1	D112	A-1	D528	A-10
IC405	C-5	Q360	D-2	D113	B-4	D529	A-8
IC406	B-5	Q362	D-3	D114	F-2	D530	A-10
IC407	C-5	Q365	E-3	D300	G-2	D533	G-10
IC408	C-6	Q366	E-3	D301	D-2	D535	B-6
IC409	C-6	Q372	C-3	D305	G-3	D537	A-7
IC410	B-4	Q373	D-3	D313	G-5	D538	D-6
IC411	B-5	Q374	C-3	D314	C-1	D539	B-7
IC412	B-4	Q404	B-5	D318	E-4	D540	E-6
IC413	C-4	Q406	B-5	D319	E-5	D541	F-3
IC502	G-6	Q408	B-5	D327	D-3		

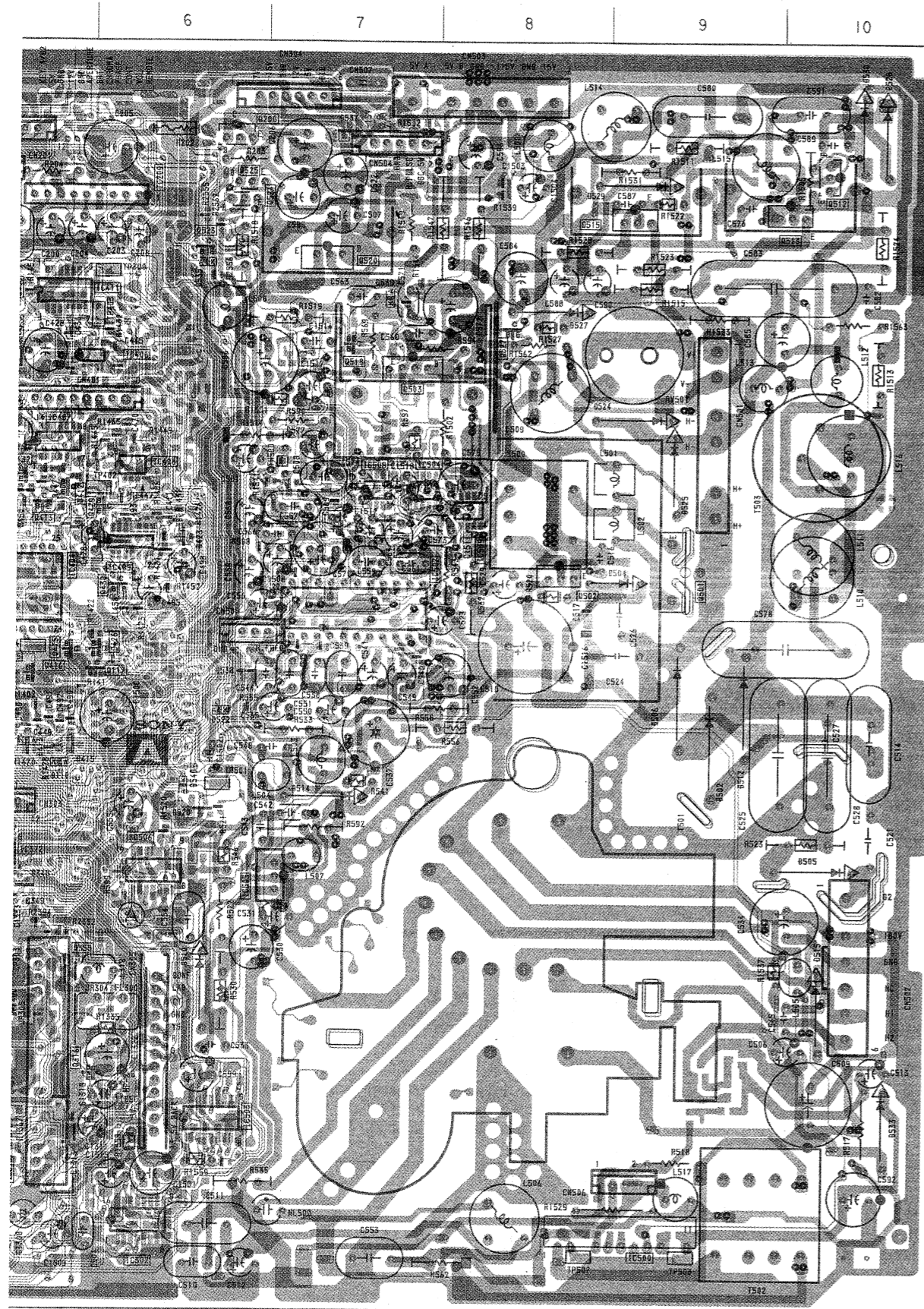
NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



Note :

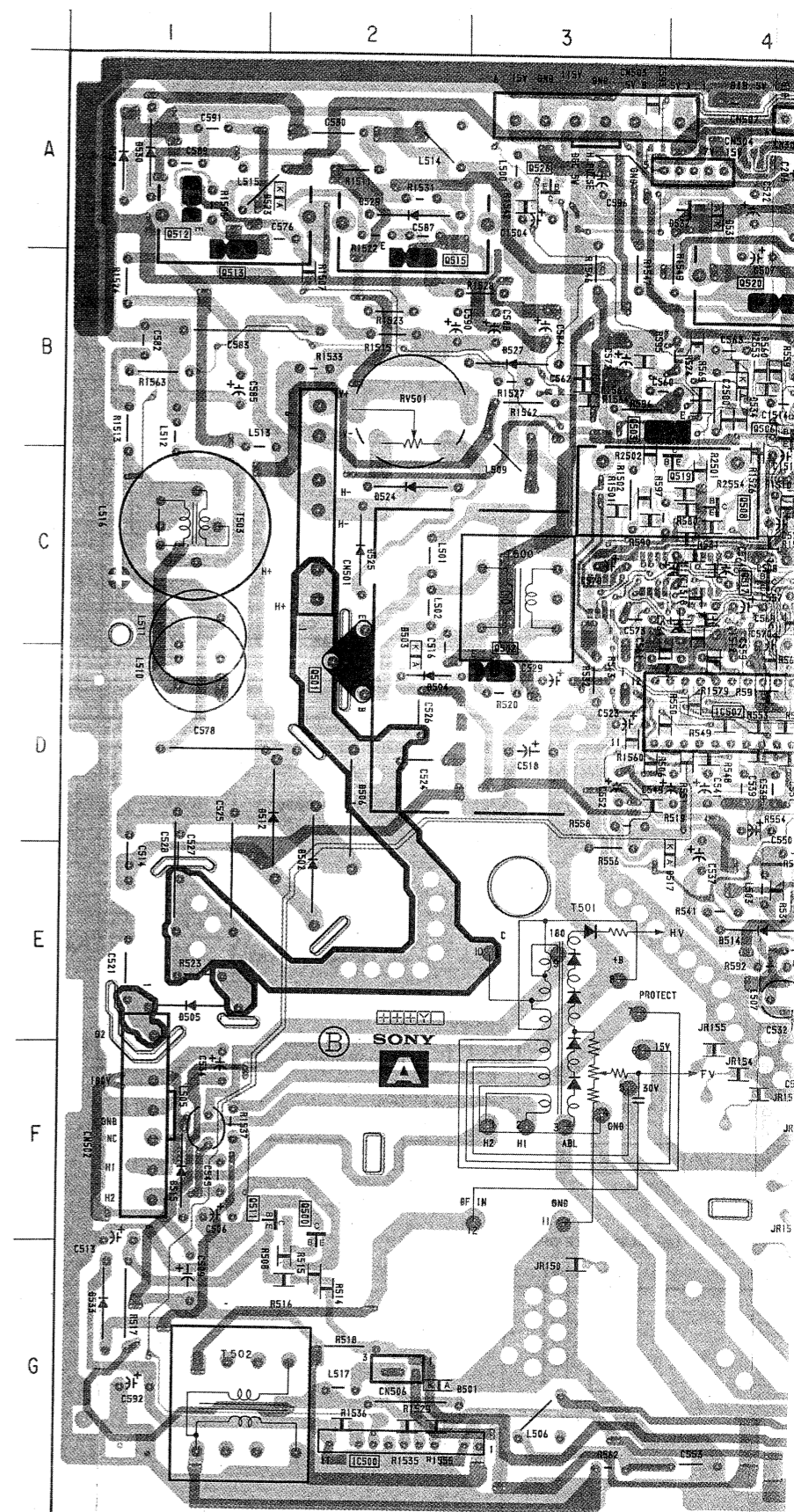
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.





CONDUCTOR SIDE

IC		Q345		D-8		Q517		C-4		D408		B-5	
IC101	A-9	Q349	E-9	Q519	C-4	D410	C-5						
IC102	B-10	Q350	D-8	Q520	B-4	D411	B-6						
IC108	B-8	Q351	D-8	Q522	E-5	D421	C-5						
IC200	A-5	Q352	D-8	Q524	A-5	D422	C-5						
IC303	E-9	Q361	F-8	Q525	A-4	D425	C-5						
IC404	D-6	Q363	G-9	Q526	A-3	D426	C-6						
IC505	E-4	Q364	D-8			D427	B-6						
IC507	D-4	Q367	E-8			D500	G-5						
TRANSISTOR		Q368	E-8	DIODE		D501	G-2						
		Q369	E-8			D502	E-2						
Q101	A-9	Q375	D-8	D101	B-10	D503	C-2						
Q111	C-10	Q401	B-6	D102	B-9	D504	D-2						
Q113	A-7	Q402	B-6	D103	B-9	D505	E-1						
Q201	A-6	Q403	B-6	D107	B-9	D506	D-2						
Q301	G-8	Q405	C-6	D200	A-4	D507	G-5						
Q302	G-10	Q407	C-7	D301	G-8	D508	G-5						
Q303	G-6	Q409	D-7	D302	F-9	D509	G-5						
Q304	G-6	Q417	C-6	D303	F-7	D510	F-5						
Q305	G-8	Q418	B-5	D304	G-7	D512	D-2						
Q306	G-7	Q419	C-6	D307	G-8	D513	E-5						
Q307	G-8	Q420	C-6	D309	G-8	D514	E-4						
Q309	G-8	Q421	B-5	D310	G-8	D515	F-1						
Q310	G-7	Q422	B-5	D311	G-9	D516	F-5						
Q312	G-8	Q423	C-5	D315	E-8	D517	D-4						
Q313	G-8	Q424	C-5	D317	D-9	D518	E-5						
Q315	G-8	Q428	D-6	D320	D-9	D519	C-4						
Q318	G-8	Q431	B-5	D322	D-9	D522	A-4						
Q319	F-7	Q434	C-5	D323	C-9	D523	A-2						
Q321	G-8	Q439	C-6	D324	E-9	D524	C-2						
Q323	G-10	Q443	C-5	D325	D-8	D525	C-2						
Q325	F-8	Q444	B-5	D326	E-9	D526	B-4						
Q326	F-6	Q500	F-2	D333	D-8	D527	B-3						
Q327	F-6	Q501	D-2	D337	E-8	D528	A-1						
Q328	G-9	Q502	D-3	D344	D-8	D529	A-2						
Q329	G-9	Q503	B-3	D345	E-7	D530	A-1						
Q330	F-9	Q505	E-5	D346	E-7	D531	A-4						
Q331	F-9	Q506	B-4	D347	E-7	D532	A-4						
Q332	G-10	Q507	E-5	D353	D-8	D533	G-1						
Q333	D-9	Q508	C-4	D354	B-7	D534	B-4						
Q334	F-9	Q509	G-5	D355	C-7	D536	A-5						
Q336	E-10	Q511	F-2	D363	E-8	VARIABLE RESISTOR							
Q337	E-10	Q512	A-1	D364	E-8								
Q338	C-9	Q513	A-1	D401	B-7	RV501	B-2						
Q339	D-8	Q514	B-4	D404	D-6								
		Q515	B-2	D405	B-5								
				D407	D-7								

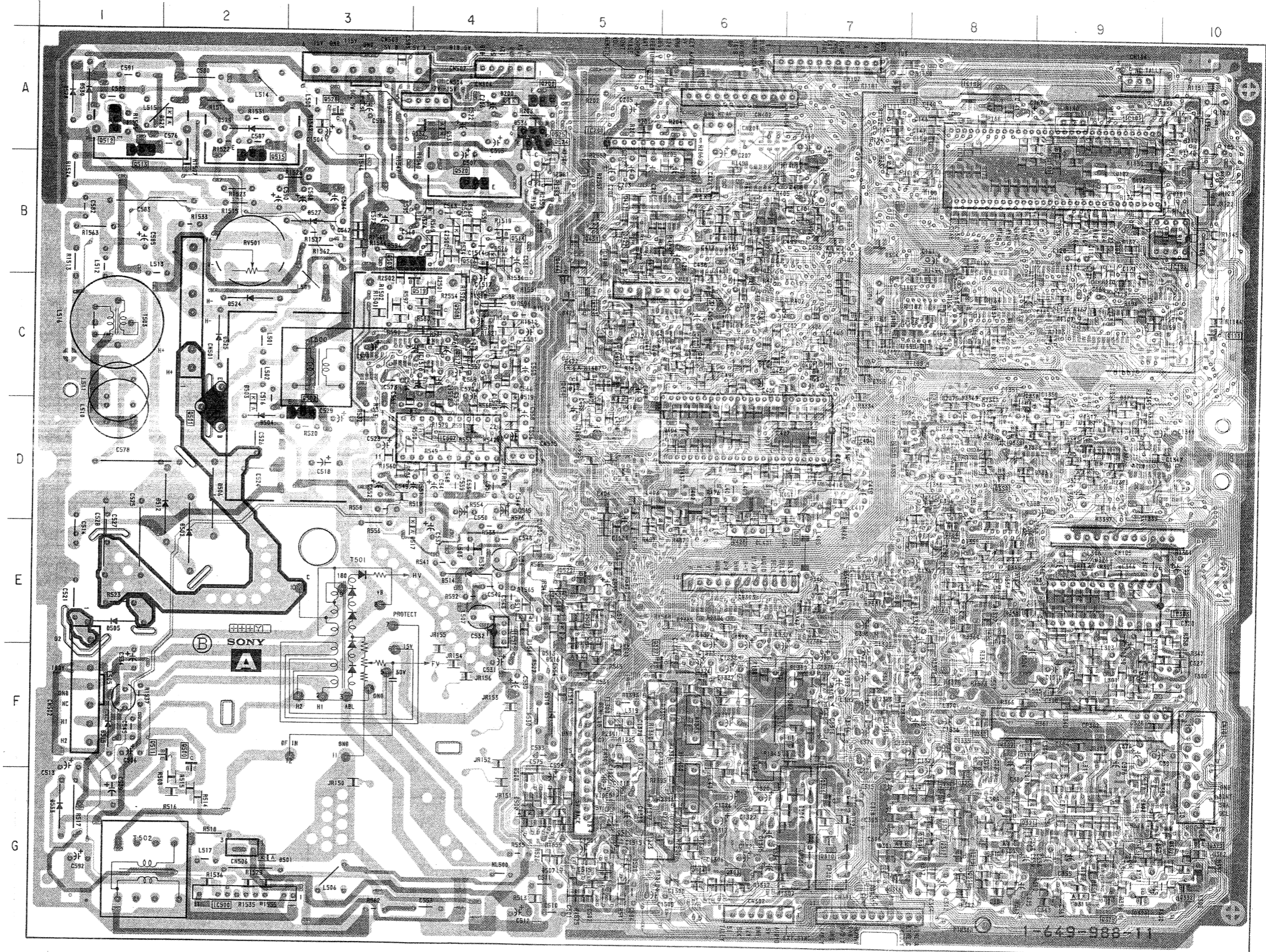
- A BOARD - (Conductor Side)

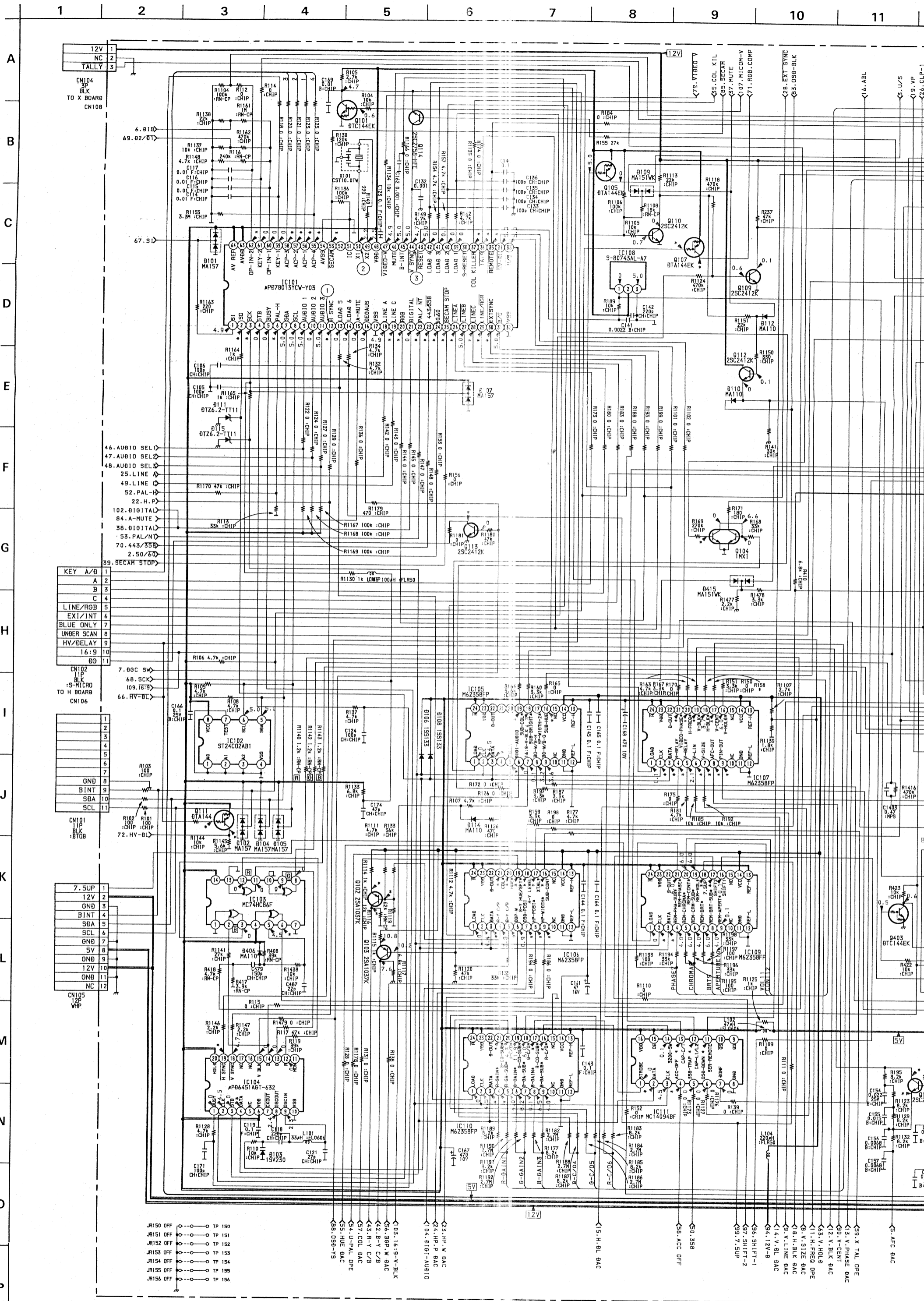


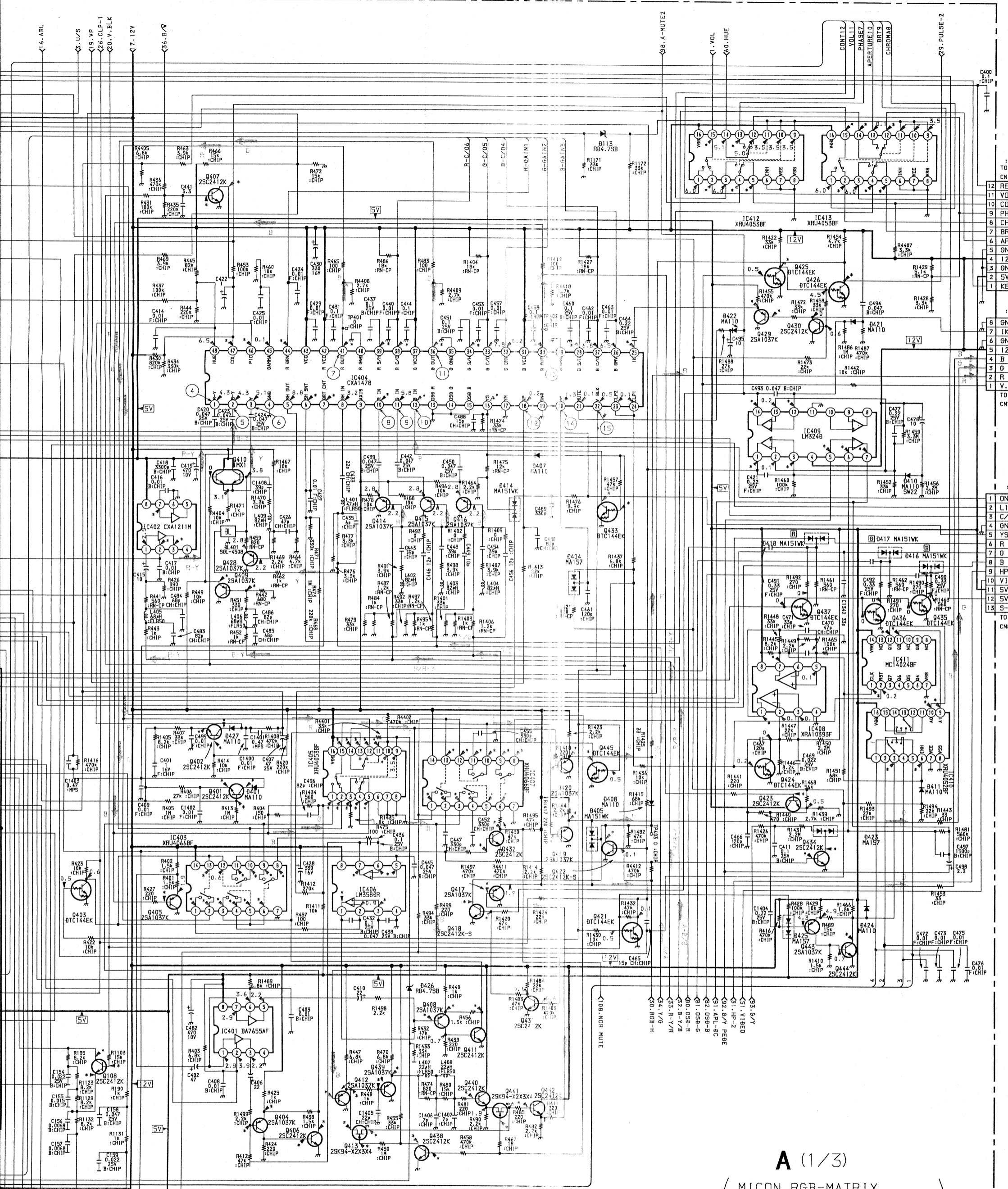
-  : Pattern from the side which enables seeing.
-  : Pattern of the rear side.

— A BOARD —      〈Conductor Side〉

Q345	D - 8	Q517	C - 4	D408	B - 5
Q349	E - 9	Q519	C - 4	D410	C - 5
Q350	D - 8	Q520	B - 4	D411	B - 6
Q351	D - 8	Q522	E - 5	D421	C - 5
Q352	D - 8	Q524	A - 5	D422	C - 5
Q361	F - 8	Q525	A - 4	D425	C - 5
Q363	G - 9	Q526	A - 3	D426	C - 6
Q364	D - 8			D427	B - 6
Q367	E - 8	DIODE		D500	G - 5
Q368	E - 8	D101	B - 10	D501	G - 2
Q369	E - 8	D102	B - 9	D502	E - 2
Q375	D - 8	D103	B - 9	D503	C - 2
Q401	B - 6	D107	B - 9	D504	D - 2
Q402	B - 6	D200	A - 4	D505	E - 1
Q403	B - 6	D301	G - 8	D506	D - 2
Q405	C - 6	D302	F - 9	D507	G - 5
Q407	C - 7	D303	F - 7	D508	G - 5
Q409	D - 7	D304	G - 7	D509	G - 5
Q417	C - 6	D307	G - 8	D510	F - 5
Q418	B - 5	D309	G - 8	D512	D - 2
Q419	C - 6	D310	G - 8	D513	E - 5
Q420	C - 6	D311	G - 9	D514	E - 4
Q421	B - 5	D315	E - 8	D515	F - 1
Q422	B - 5	D317	D - 9	D516	F - 5
Q423	C - 5	D320	D - 9	D517	D - 4
Q424	C - 5	D322	D - 9	D518	E - 5
Q428	D - 6	D323	C - 9	D519	C - 4
Q431	B - 5	D324	E - 9	D522	A - 4
Q434	C - 5	D325	D - 8	D523	A - 2
Q439	C - 6	D326	E - 9	D524	C - 2
Q443	C - 5	D333	D - 8	D525	C - 2
Q444	B - 5	D337	E - 8	D526	B - 4
Q500	F - 2	D344	D - 8	D527	B - 3
Q501	D - 2	D345	E - 7	D528	A - 1
Q502	D - 3	D346	E - 7	D529	A - 2
Q503	B - 3	D347	E - 7	D530	A - 1
Q505	E - 5	D353	D - 8	D531	A - 4
Q506	B - 4	D354	B - 7	D532	A - 4
Q507	E - 5	D355	C - 7	D533	G - 1
Q508	C - 4	D363	E - 8	D534	B - 4
Q509	G - 5	D364	E - 8	D536	A - 5
Q511	F - 2	D401	B - 7		
Q512	A - 1	D404	D - 6		
Q513	A - 1	D405	B - 5		
Q514	B - 4	D407	D - 7		
Q515	B - 2			VARIABLE RESISTOR	
				RV501	B - 2



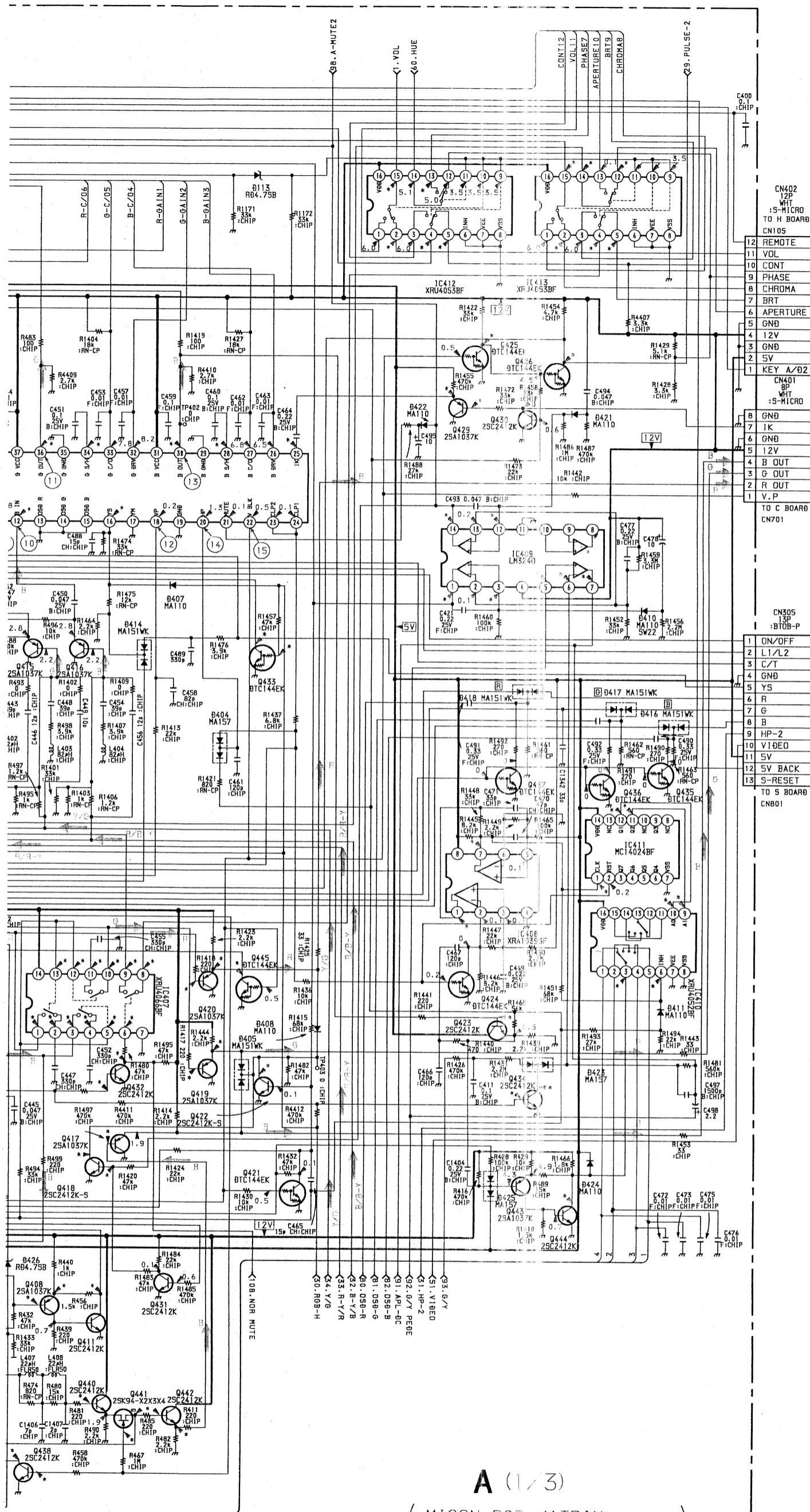




A (1/3)

MICON, RGB-MATRIX,  
DAC, ON SCREEN DISPLAY,  
ON/OFF-MUTE, VOL OFF SW,  
BLACK-SAMPLING, RGB SW

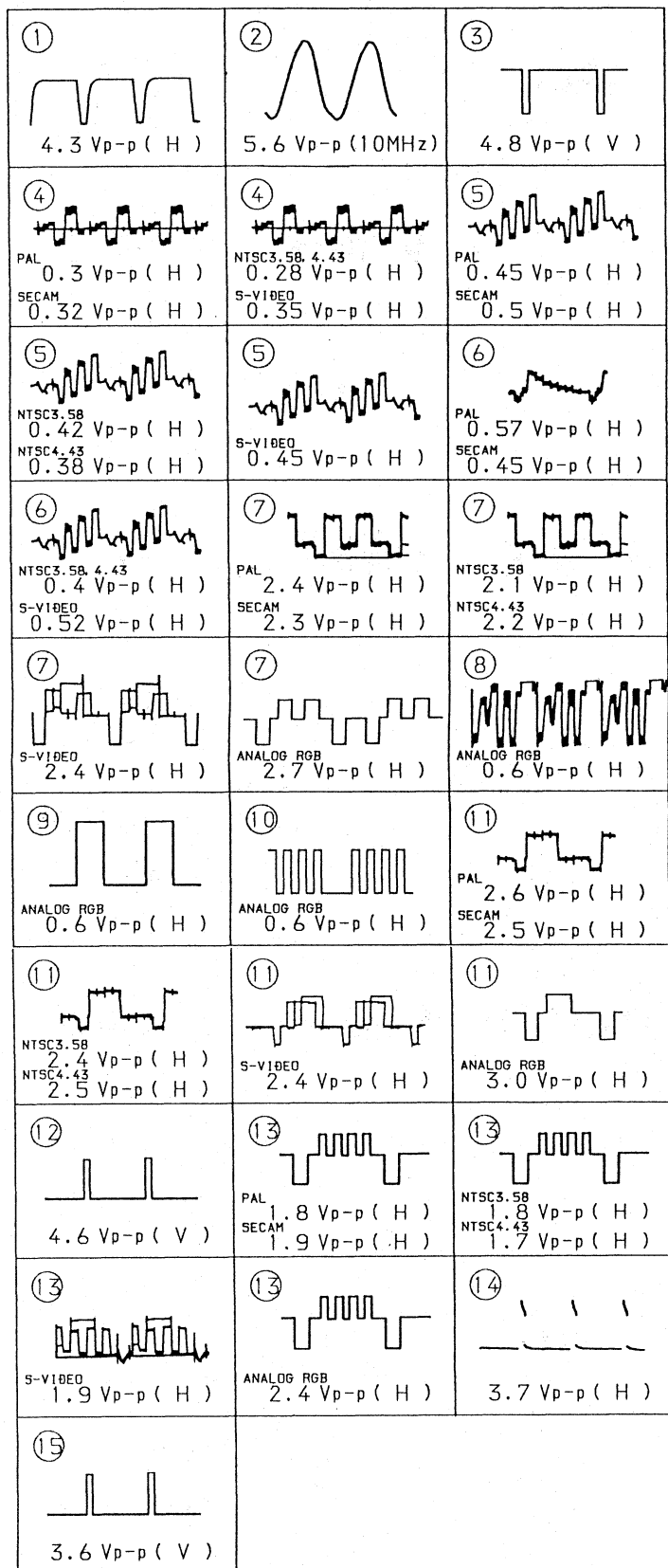
<p>①</p> <p>4.3 Vp-p ( H )</p>	<p>②</p> <p>5.6 Vp-p ( 10 )</p>
<p>④</p> <p>PAL 0.3 Vp-p ( H ) SECAM 0.32 Vp-p ( H )</p>	<p>④</p> <p>NTSC3.58 0.28 Vp-p ( H ) S-VIDEO 0.35 Vp-p ( H )</p>
<p>⑤</p> <p>NTSC3.58 0.42 Vp-p ( H ) NTSC4.43 0.38 Vp-p ( H )</p>	<p>⑤</p> <p>S-VIDEO 0.45 Vp-p ( H )</p>
<p>⑥</p> <p>NTSC3.58 0.4 Vp-p ( H ) S-VIDEO 0.52 Vp-p ( H )</p>	<p>⑦</p> <p>PAL 2.4 Vp-p ( H ) SECAM 2.3 Vp-p ( H )</p>
<p>⑦</p> <p>S-VIDEO 2.4 Vp-p ( H )</p>	<p>⑦</p> <p>ANALOG RGB 2.7 Vp-p ( H )</p>
<p>⑨</p> <p>ANALOG RGB 0.6 Vp-p ( H )</p>	<p>⑩</p> <p>ANALOG RGB 0.6 Vp-p ( H )</p>
<p>⑪</p> <p>NTSC3.58 2.4 Vp-p ( H ) NTSC4.43 2.5 Vp-p ( H )</p>	<p>⑪</p> <p>S-VIDEO 2.4 Vp-p ( H )</p>
<p>⑫</p> <p>4.6 Vp-p ( V )</p>	<p>⑬</p> <p>PAL 1.8 Vp-p ( H ) SECAM 1.9 Vp-p ( H )</p>
<p>⑬</p> <p>S-VIDEO 1.9 Vp-p ( H )</p>	<p>⑬</p> <p>ANALOG RGB 2.4 Vp-p ( H )</p>
<p>⑮</p> <p>3.6 Vp-p ( V )</p>	



A (1/3)

MICON, RGB-MATRIX,  
DAC, ON SCREEN DISPLAY,  
ON/OFF-MUTE, VOL OFF SW,  
BLACK-SAMPLING, RGB SW

## A BOARD WAVEFORMS



## A BOARD \* MARK

	PAL	SECAM	NTSC3.58	NTSC4.43	S-VIDEO	ANALOG RGB
IC101 ②	2.3	2.4	2.3	2.3	2.0	2.3
③	4.5	4.6	4.5	4.5	4.4	4.5
④	4.1	3.4	3.4	3.4	3.1	3.5
⑤	0	0	0	0	4.8	0
⑥	0	0	0	0	0	4.9
⑦	4.9	5.0	5.0	5.0	0	0
⑧	5.0	5.0	5.0	5.0	0	0
⑨	5.0	5.0	5.0	5.0	0	0
⑩	0	5.0	5.0	5.0	0	0
⑪	0.1	0	0	0	0.1	0.1
⑫	5.0	5.0	5.0	5.0	5.0	5.0
⑬	5.0	5.0	5.0	5.0	5.0	5.0
⑭	5.0	5.0	5.0	5.0	5.0	5.0
⑮	4.2	4.1	4.1	4.1	3.9	3.9
⑯	4.0	4.0	4.0	4.0	3.7	3.7
⑰	0.3	0.4	0.4	0.4	0.1	0.1
⑱	4.2	0.1	0.1	0.1	4.0	4.0
⑲	4.0	3.4	3.4	3.4	3.0	3.0
⑳	0.5	0.3	0.3	0.3	1.9	1.9
㉑	3.0	2.5	2.5	2.5	2.2	2.2
㉒	3.6	3.0	3.0	3.0	4.0	4.0
㉓	4.0	4.0	4.0	4.0	4.0	4.0
IC103 ⑥	0.2	0	0	0	0	0
IC104 ④	2.3	2.3	2.3	2.3	2.3	2.3
⑤	3.5	3.5	3.5	3.5	3.5	3.5
IC105 ③	2.3	2.3	2.3	2.3	2.3	2.3
④	0	0.1	0.1	0.1	0	0
⑤	2.6	2.7	2.7	2.7	2.6	2.6
⑥	5.4	5.4	5.4	5.4	5.1	5.1
IC106 ③	2.3	2.3	2.3	2.3	2.3	2.3
④	5.4	5.4	5.4	5.4	5.4	5.4
⑤	2.4	2.4	2.4	2.4	2.4	2.4
⑥	7.8	7.8	7.8	7.8	7.5	7.5
⑦	5.1	5.1	5.1	5.1	5.1	5.1
⑧	0.1	0.6	0.6	0.6	2.5	2.5
⑨	3.1	3.1	3.1	3.1	3.5	3.5
⑩	2.4	4.6	4.6	4.6	4.2	4.2
⑪	6.3	6.3	6.3	6.3	3.7	3.7
⑫	3.6	3.6	3.6	3.6	2.6	2.6
⑬	0.9	1.8	1.8	1.8	3.1	3.1
IC107 ②	4.6	4.6	4.6	4.6	0	0
③	2.3	2.3	2.3	2.3	2.3	2.3
④	2.8	2.8	2.8	2.8	2.8	2.8
⑤	1.5	1.4	1.4	1.4	1.4	1.4
⑥	2.9	2.9	2.9	2.9	2.9	2.9
⑦	2.6	2.6	2.6	2.6	2.6	2.6
⑧	2.9	2.9	2.9	2.9	2.9	2.9
⑨	2.6	2.6	2.6	2.6	2.6	2.6
⑩	3.2	3.2	3.2	3.2	3.4	3.4
⑪	4.5	4.6	4.6	4.6	5.0	5.0
⑫	6.3	6.3	6.3	6.3	6.1	6.1
IC109 ②	4.6	4.6	4.6	4.6	4.4	4.4
③	2.3	2.3	2.3	2.3	2.3	2.3
④	11.9	11.9	11.9	11.9	0.1	0.1
⑤	11.9	11.9	11.9	11.9	1.9	1.9
IC110 ③	2.3	2.4	2.4	2.4	2.2	2.2
④	7.2	7.2	7.2	7.2	7.2	7.2
⑤	5.8	5.8	5.8	5.8	5.8	5.8
⑥	11.9	11.9	11.9	11.9	1.9	1.9
⑦	0	7.9	7.9	7.9	7.9	7.9
⑧	3.7	3.7	3.7	3.7	3.6	3.6
IC111 ④	0.3	0.3	0.3	0.3	0.3	0.3
⑤	0.2	0	0	0	0.1	0.1
⑥	0	5.0	5.0	5.0	5.0	5.0
⑦	5.0	5.0	5.0	5.0	5.0	5.0
IC402 ②	3.1	3.9	3.9	3.9	3.5	3.5
③	0	2.3	2.3	2.3	2.2	2.2
④	2.9	2.9	2.9	2.9	2.9	2.9
IC403 ①	0.8	0.8	0.8	0.8	0	0
②	1.2	1.2	1.2	1.2	0.9	0.9
③	1.4	1.3	1.3	1.3	0	0
④	0.8	0.8	0.8	0.8	1.4	1.4
⑤	0.6	0.5	0.5	0.5	0.8	0.8
⑥	0.5	0.5	0.5	0.5	0	0
⑦	1.0	1.0	1.0	1.0	1.1	1.1
⑧	1.6	1.5	1.5	1.5	1.8	1.8
⑨	1.4	1.4	1.4	1.4	1.5	1.5
⑩	0.9	1.0	1.0	1.0	0.9	0.9
⑪	0.6	0.5	0.5	0.5	0.3	0.3
⑫	0.6	0.5	0.5	0.5	0	0
IC404 ⑥	3.0	3.0	3.0	3.0	3.0	3.0
⑦	4.9	4.9	4.9	4.9	6.1	6.1
⑧	5.6	5.6	5.6	5.6	5.8	5.8
⑨	5.6	5.6	5.6	5.6	5.8	5.8
⑩	0	0.1	0.1	0.1	4.4	4.4
⑪	3.8	4.0	4.0	4.0	3.5	3.5
⑫	7.1	8.6	8.6	8.6	7.9	7.9
⑬	1.4	1.3	1.3	1.3	1.4	1.4
⑭	7.0	7.3	7.3	7.3	7.8	7.8
⑮	1.4	1.3	1.3	1.3	1.5	1.5
⑯	7.8	7.8	7.8	7.8	7.7	7.7
⑰	6.9	7.1	7.1	7.1	7.6	7.6
⑱	1.2	1.2	1.2	1.2	1.3	1.3
⑲	7.2	7.2	7.2	7.2	7.2	7.2
㉑	7.2	7.2	7.2	7.2	7.0	7.0
㉒	6.6	5.5	5.5	5.5	6	6
IC405 ①	1.6	1.5	1.5	1.5	1.6	1.6
②	1.4	1.4	1.4	1.4	1.5	1.5
③	1.2	1.2	1.2	1.2	1.2	1.2
④	1.4	1.3	1.3	1.3	1.4	1.4
⑤	1.3	1.3	1.3	1.3	1.4	1.4
⑥	0.5	0.5	0.5	0.5	0.2	0.2
⑦	0.5	0.5	0.5	0.5	0.2	0.2
⑧	1.2	1.2	1.2	1.2	1.3	1.3
⑨	1.4	1.3	1.3	1.3	1.4	1.4
⑩	1.2	1.2	1.2	1.2	1.3	1.3
⑪	1.4	1.3	1.3	1.3	1.5	1.5
IC406 ①	4.8	5.1	5.1	5.1	4.8	5.1
②	0.8	0	0	0	0.8	1.0
③	1.0	0.9	0.9	0.9	1.0	1.1
④	1.0	1.0	1.0	1.0	1.1	1.1
⑤	5.1	5.1	5.1	5.1	5.1	5.1
IC407 ①	1.2	1.2	1.2	1.2	1.3	1.3
②	0.4	-0.1	-0.1	-0.1	0.5	0.5
③	1.4	1.3	1.3	1.3	1.4	1.4
④	0.6	0	0	0	0.7	0.7
⑤	2.0	1.8	1.8	1.8	2.0	2.0
⑥	11.7	10.7	10.7	10.7	11.2	11.2
⑦	5.6	5.5	5.5	5.5	5.5	5.5
⑧	5.6	5.5	5.5	5.5	5.4	5.4
⑨	1.4	1.4	1.4	1.4	1.5	1.5
⑩	0.6	-0.1	-0.1	-0.1	0.5	0.5
⑪	2.0	1.7	1.7	1.7	2.0	2.0
⑫	2.0	1.7	1.7	1.7	2.0	2.0
IC408 ①	3.1	2.9	2.9	2.9	3.7	3.4
②	4.1	3.8	3.8	3.8	4.2	4.1
IC409 ①	0	8.8	8.8	8.8	0	7.5
②	0	0.6	0.6	0.6	0.3	1.8
③	5.9	5.9	5.9	5.9	5.9	5.9
④	5.9	5.9	5.9	5.9	5.9	5.9
⑤	5.9	5.9	5.9	5.9	5.9	5.9
⑥	0.1	1.9	1.9	1.9	0.1	0
⑦	0	10.7	10.7	10.7	0	10.7

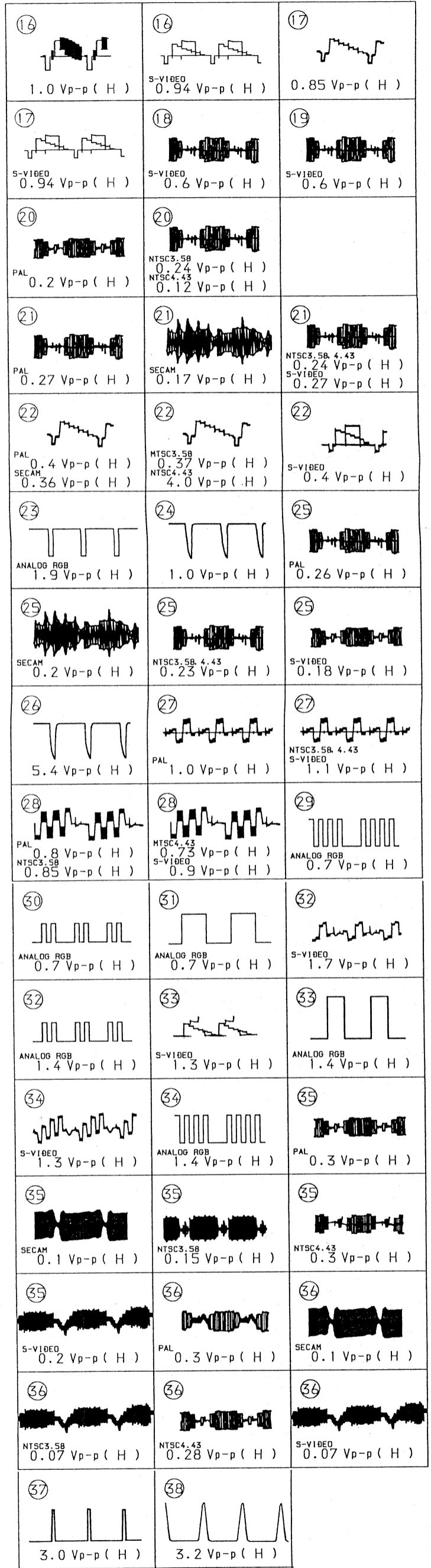
	PAL	SECAM	NTSC3.58	NTSC4.43	S-VIDEO	ANALOG RGB
IC410 ①	3.8	4.0	4.0	4.0	0	3.9
②	3.0	3.1	3.1	3.1	0	4.0
③	1.3	0.7	1.4	1.6	2.3	1.5
④	3.6	3.6	3.0	3.8	3.9	3.9
⑤	0.6	1.3	1.1	1.1	3.1	1.7
⑥	4.0	4.0	4.0	3.9	0	0
⑦	0	2.0	1.9	1.8	2.5	1.4
⑧	2.0	2.3	2.3	2.0	1.8	3.0
IC411 ①	4.1	4.0	3.9	3.8	4.2	4.1
②	1.8	2.0	1.9	1.8	2.5	1.3
③	2.0	2.3	2.3	2.1	1.8	3.0
IC412 ②	0.4	0.5	0.4	0.4	5.9	0.6
③	8.9	8.9	8.9	8.9	8.9	8.3
④	9.0	9.0	9.0	8.9	8.9	8.3
⑤	6.0	6.0	6.0	6.0	6.0	0
⑥	0.4	0.5	0.4	0.4	5.9	0.5
IC413 ②	7.5	8.0	8.0	8.0	0	6.9
③	0	5.5	5.5	5.5	5.4	0
④	6.5	5.5	5.5	5.5	5.4	8.6
⑤	3.1	3.1	3.1	3.1	0	5.1
⑥	3.1	3.1	3.1	3.1	6.0	5.1
⑦	7.9	8.0	7.9	7.9	6.3	6.9
IC414 ②	10.9	10.9	10.9	10.9	10.7	10.9
③	8.1	8.1	8.1	8.1	0	8.1
④	11.5	11.5	11.5	11.5	11.3	11.5
IC415 ②	-0.2	0	-0.2	0	0	-0.2
③	5.0	5.0	5.0	5.0	5.0	0.1
④	0	0	0	0	0	5.0
⑤	2.6	2.6	2.6	2.6	2.9	2.6
⑥	2.6	2.6	2.6	2.6	2.9	2.6
⑦	5.0	5.0	0	0	4.9	4.9
⑧	0.4	0.4	0	0	0.4	0.4
⑨	4.1	4.3	4.2	4.2	3.8	4.0
IC416 ②	1.1	0.8	1.5	1.6	1.2	1.0
③	7.5	5.5	6.0	5.2	8.4	10.0
④	1.4	1.6	2.2	3.4	3.1	1.0
⑤	0.5	0.5	0.5	0.5	2.4	0.5
⑥	9.5	7.7	8.1	7.4	10.4	6.9
⑦	1.4	1.5	3.2	3.3	3.2	1.0
⑧	5.9	4.1	4.8	5.2	5.3	5.2
⑨	6.1	6.3	6.0	6.1	6.1	6.2
⑩	1.3	1.3	1.2	1.1	1.2	1.4
IC417 ②	0.7	0.7	0	0.7	0.7	0.7
③	1.6	1.5	1.0	1.5	1.4	1.6
④	0	0	0	0	0	0.6
⑤	6.6	6.8	6.6	6.6	5.4	0
⑥	5.3	4.7	4.9	5.0	5.2	5.2
⑦	6.0	5.2	5.9	6.1	6.0	6.1
⑧	1.6	1.6	1.6	1.6	1.7	1.6
⑨	2.0	2.2	2.2	2.2	2.3	2.2
⑩	1.4	1.4	0.9	1.3	1.3	1.4
⑪	1.3	1.3	1.0	1.3	1.1	1.4
⑫	2.0	1.9	1.7	1.9	1.8	2.0
⑬	2.0	-15.1	1.6	-2.2	1.8	-2.1
⑭	2.0	1.9	-4.3	0	2.2	2.0
⑮	2.0	1.9	1.7	1.9	1.8	2.0

# A BOARD \* MARK

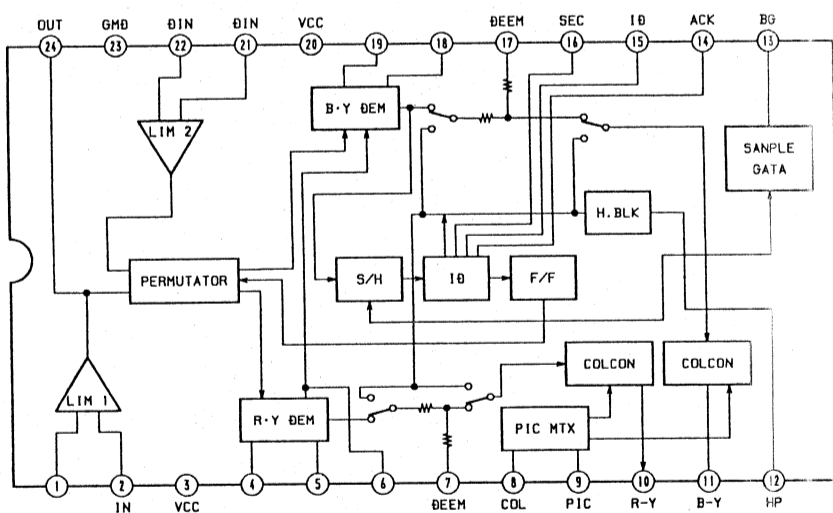
	PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO	ANALOG RGB
IC301 ①	2.8	0	2.8	3.0	3.0	2.3
②	2.0	0	1.8	1.7	1.7	3.5
IC302 ①	2.9	2.9	2.9	0.3	2.9	2.9
②	5.3	5.1	4.5	4.5	4.5	4.5
③	10.5	8.4	0	0	0	0
IC303 ①	2.3	2.6	2.2	2.2	2.6	2.8
②	0.1	4.2	0.6	0.6	0.6	0.1
③	3.9	2.8	3.1	3.1	3.3	3.9
IC304 ①	2.2	2.6	2.2	2.2	2.2	2.2
②	9.4	0.1	9.4	9.4	9.4	9.4
③	7.3	7.3	2.5	2.5	2.6	2.5
④	7.3	7.3	2.5	2.6	2.6	2.5
⑤	1.9	1.9	2.2	2.2	2.2	2.2
⑥	2.5	2.5	2.2	2.2	2.3	2.2
IC305 ①	2.8	2.8	2.8	0	2.8	2.8
②	2.5	1.1	2.5	2.4	2.4	1.3
③	4.1	4.1	4.1	4.1	4.2	4.5
④	0.4	0.2	0	0	0	0.1
⑤	2.6	2.6	2.5	2.4	2.5	2.7
⑥	0	0	0.8	0.8	0.9	0.9
⑦	2.1	2.7	1.9	1.9	1.9	2.7
IC306 ①	8.1	8.1	8.1	8.1	8.1	0
②	0	0	0	0.1	0.1	4.4
IC309 ①	3.6	0	3.6	3.6	3.6	3.6
②	0	0	0	0	0	4.4
IC310 ①	6.2	6.2	6.2	6.2	6.2	5.9
②	6.3	6.3	6.2	6.2	6.2	5.9
③	5.9	5.9	6.0	6.3	5.9	5.9
IC311 ①	0	6.2	6.2	6.2	6.2	6.2
②	6.2	6.2	6.2	6.2	6.2	5.9
③	6.2	6.3	6.3	6.2	6.2	5.9
④	3.3	3.3	2.9	2.9	2.9	0
⑤	5.9	5.9	5.9	6.2	5.8	5.9
⑥	0.4	0.4	0.4	0.4	0.5	0.7
IC312 ①	3.6	0	3.6	3.6	3.6	3.6
②	0	0	0	12.0	0.1	4.5
IC313 ①	0	6.3	0	6.3	6.3	6.3
IC314 ①	0	3.0	7.6	0	3.0	0
②	0	0	0	0	2.9	0.1
IC315 ①	0.4	0.4	0.4	0.4	0.4	0.6
②	0.6	0	0.6	0.6	0.6	0.6
③	9.4	9.3	9.3	9.2	9.3	9.4
④	2.5	2.5	2.5	2.5	2.5	7.2
⑤	0.4	0.4	0.4	0.4	0.4	0.6
⑥	0.4	0.4	0.4	0.4	0.4	0.6
IC317 ①	2.0	0	2.0	2.1	2.0	12.0
②	12.0	0	12.0	12.0	12.0	12.0
③	10.7	10.6	10.6	10.6	10.5	10.7
④	9.4	9.4	9.4	9.4	9.1	9.4
IC318 ①	11.5	11.5	0	11.4	11.4	11.4
IC320 ①	6.3	6.3	6.3	6.3	6.3	0
②	3.0	0	0	3.1	0	0
③	0	0	0	0	3.3	0
IC321 ①	0	0.1	0.1	0	2.9	0
②	0	0	0	0	0.1	2.7
IC322 ①	5.8	5.9	6.0	6.3	5.9	5.9
IC323 ①	6.2	6.3	6.2	6.2	6.2	5.9
②	0	5.6	5.6	5.6	5.6	5.6
IC324 ①	6.2	6.2	6.2	6.2	6.2	5.9
IC326 ①	5.9	5.9	6.0	6.3	5.9	5.9
②	5.9	5.9	5.9	6.2	5.8	5.9
③	5.9	5.9	5.9	6.2	5.8	5.9
④	1.7	1.9	1.6	1.6	2.1	2.1
⑤	2.4	1.0	2.3	2.3	2.3	4.6
⑥	0	-0.1	10.8	0	-0.1	0
⑦	6.3	6.3	6.3	6.3	6.2	5.9
⑧	6.3	6.3	6.3	6.3	6.2	5.9
⑨	6.3	6.3	6.2	6.2	6.2	5.9

	PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO	ANALOG RGB
IC326 ①	6.2	6.2	6.2	6.2	6.2	5.9
②	6.2	6.2	6.2	6.2	6.2	5.9
③	6.2	6.2	6.2	6.2	6.2	5.9
IC350 ①	6.6	6.5	6.4	6.3	6.1	6.9
②	6.2	6.2	6.2	6.3	6.0	6.4
③	6.2	6.2	6.2	6.3	6.0	6.4
Q300 B	2.5	2.5	2.2	2.2	2.2	2.2
C	10.2	10.2	10.4	10.5	10.4	10.5
E	1.9	1.9	1.6	1.6	1.6	1.6
Q301 E	8.6	8.5	8.2	8.3	8.5	9.8
Q303 E	5.7	5.7	5.7	5.7	5.5	5.7
Q304 B	6.3	6.3	6.3	6.3	6.2	6.3
E	5.7	5.7	5.7	5.7	5.5	5.7
Q305 B	8.6	8.5	8.2	8.3	8.5	9.8
E	7.9	7.9	7.6	7.7	7.9	9.1
Q307 E	1.4	1.4	1.1	1.2	1.4	2.7
Q309 B	1.4	1.4	1.1	1.2	1.4	2.6
C	0.1	0.1	0.2	0.1	0.1	0
E	0.7	1.8	0.7	0.3	0	1.8
Q312 C	8.2	8.2	8.6	8.3	8.3	8.1
Q313 B	8.2	8.2	8.6	8.3	8.2	8.1
E	8.8	8.8	9.3	8.9	8.9	8.7
Q314 B	11.9	6.4	11.9	11.9	11.9	11.9
C	0	11.9	0	0	0	0
Q315 B	3.3	3.2	2.9	3.1	3.2	3.3
E	3.9	3.9	3.5	3.6	3.8	4.0
Q318 B	12.1	12.0	11.7	11.9	12.1	12.1
C	1.0	1.0	1.2	1.0	1.0	0.9
Q322 B	2.4	2.4	2.3	2.3	5.6	2.4
E	1.8	1.8	1.6	1.6	5.0	1.8
Q323 B	5.0	5.0	0	0	0	0
C	0	0	3.5	3.6	3.5	3.6
Q324 B	4.1	4.2	0	0	0	0
C	0	0	0.8	0.8	0.8	0.9
Q328 B	2.2	2.2	2.2	2.2	2.0	1.3
C	2.8	2.8	2.8	2.8	0	0
Q329 D	2.1	2.1	2.2	2.2	0	2.2
G	0	0	1.6	0	2.9	2.8
Q332 B	4.9	5.0	0	4.8	0	0
C	0	0	4.4	0	4.3	4.4
Q333 B	1.7	1.7	1.9	1.7	1.7	1.7
E	1.5	1.5	1.7	1.5	1.5	1.4
Q336 G	4.7	4.6	4.6	4.7	4.2	4.8
D	4.3	4.3	4.3	4.3	4.5	4.3
Q339 B	12.3	12.5	12.5	12.3	12.5	12.3
Q347 B	0.1	4.2	0.1	0.1	0.6	0.1
C	9.4	0.1	9.4	9.4	9.4	9.4
Q349 B	2.8	2.7	2.7	2.7	2.2	2.8
E	3.4	3.3	3.4	3.4	2.8	3.4
Q354 B	12.0	0.6	0	0	0	0
E	12.0	0.4	0	0	0	-0.2
Q358 E	2.2	2.2	0	2.2	2.2	2.2
Q360 I	6.2	6.2	6.2	6.2	6.1	6.4
3	6.2	6.2	6.2	6.2	6.0	6.4
5	1.3	4.7	2.2	2.2	5.3	3.8
Q361 B	4.9	4.9	5.0	4.9	5.0	0.8
C	0.1	0	0	0	0.1	4.9
Q362 C	9.0	9.0	9.0	9.0	9.2	8.5
Q364 C	3.3	3.3	2.9	3.3	2.8	2.9
Q365 B	0.4	0	0.3	0.3	0.4	0.4
Q369 B	0.8	0.9	0.8	0.8	0.9	4.9
Q372 B	0	0	0	0	0	4.9
C	11.7	11.7	11.8	11.8	11.7	0
Q374 B	10.4	10.3	10.1	10.3	10.7	6.4
C	0	0	0	0	6.2	6.7
E	6.4	6.4	6.3	6.3	6.1	6.7
Q375 B	10.7	10.8	10.7	10.7	10.7	5.9
C	0	0	0	0	6.3	6.4
E	6.2	6.2	6.2	6.2	6.0	6.4

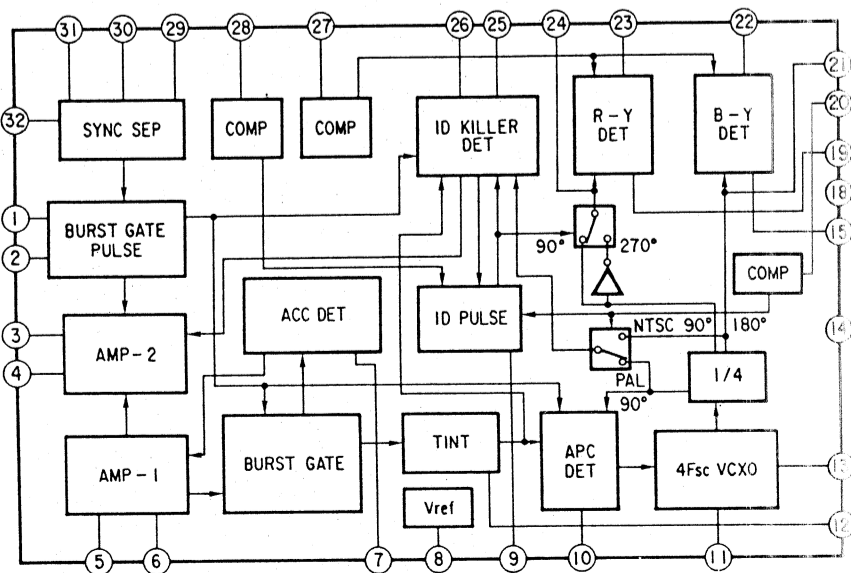
# A BOARD WAVEFORMS

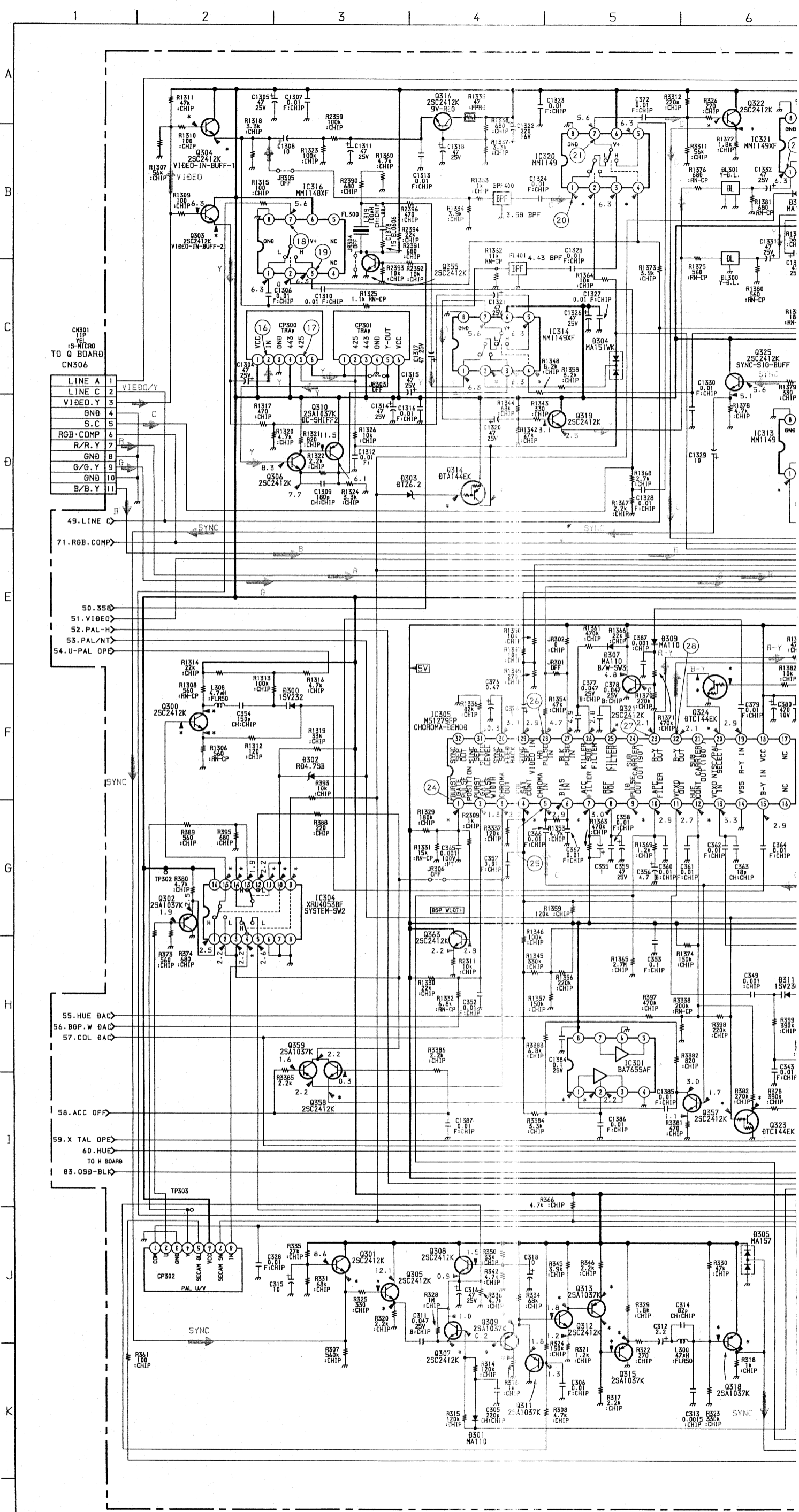
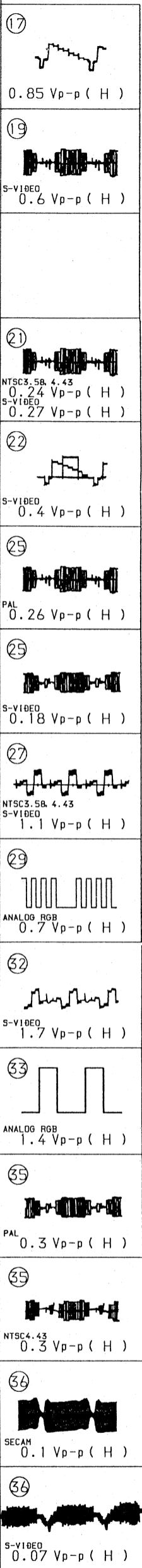


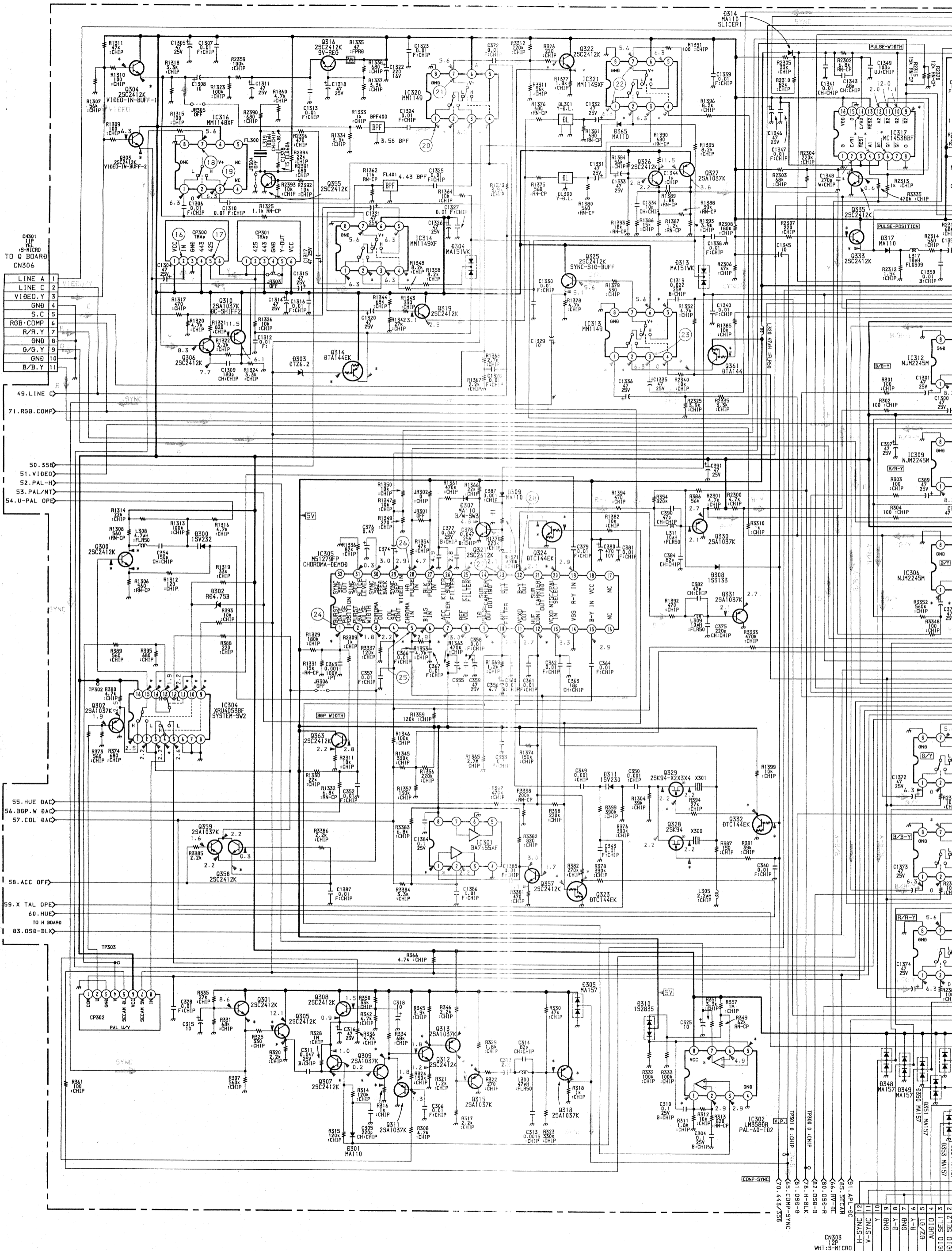
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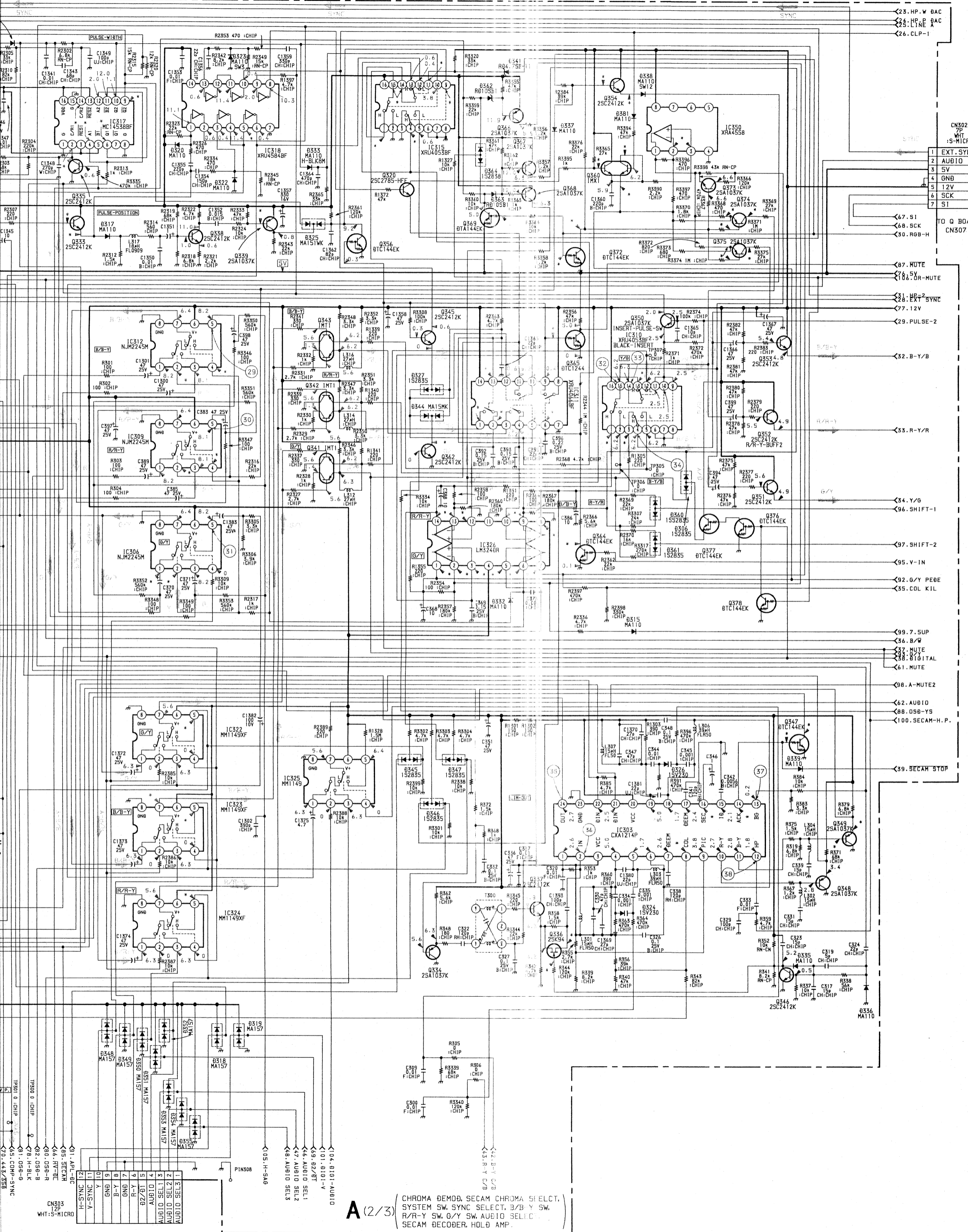


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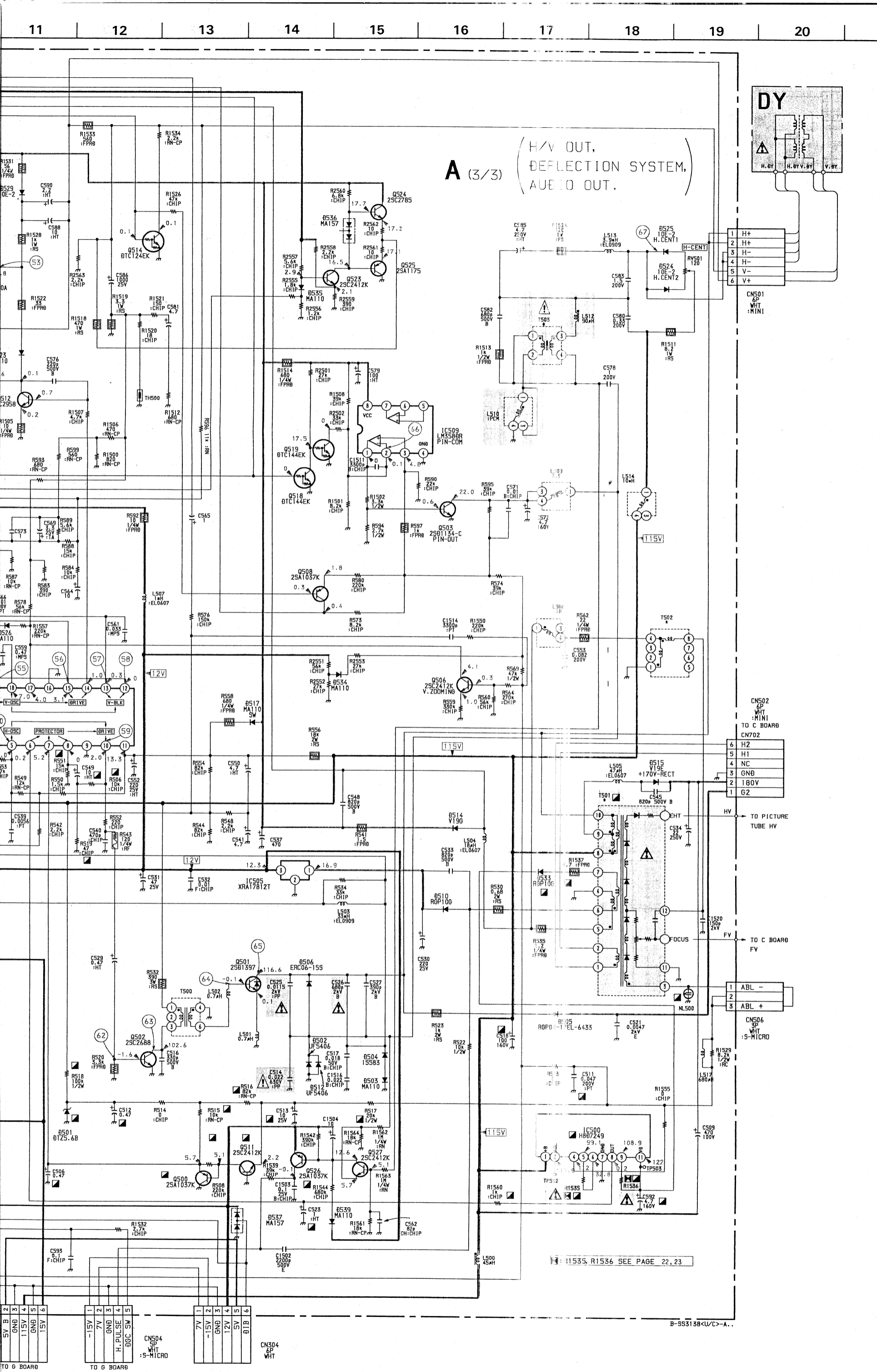


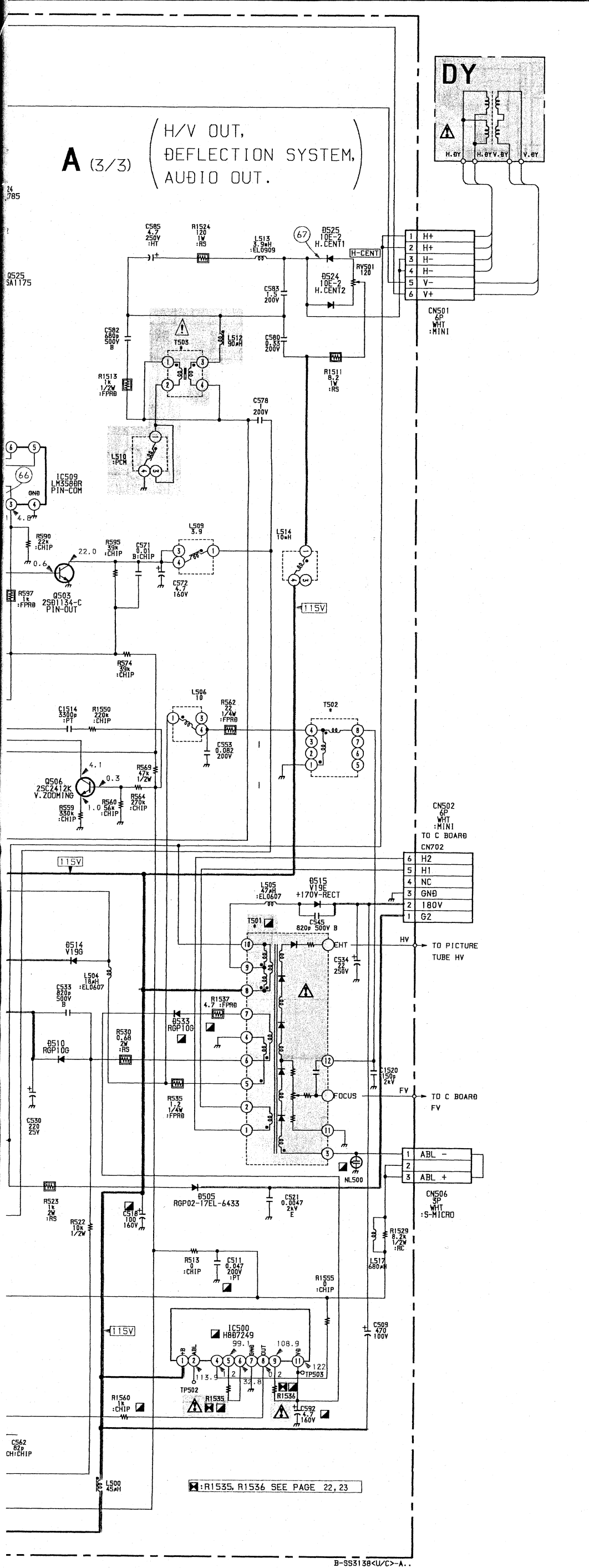




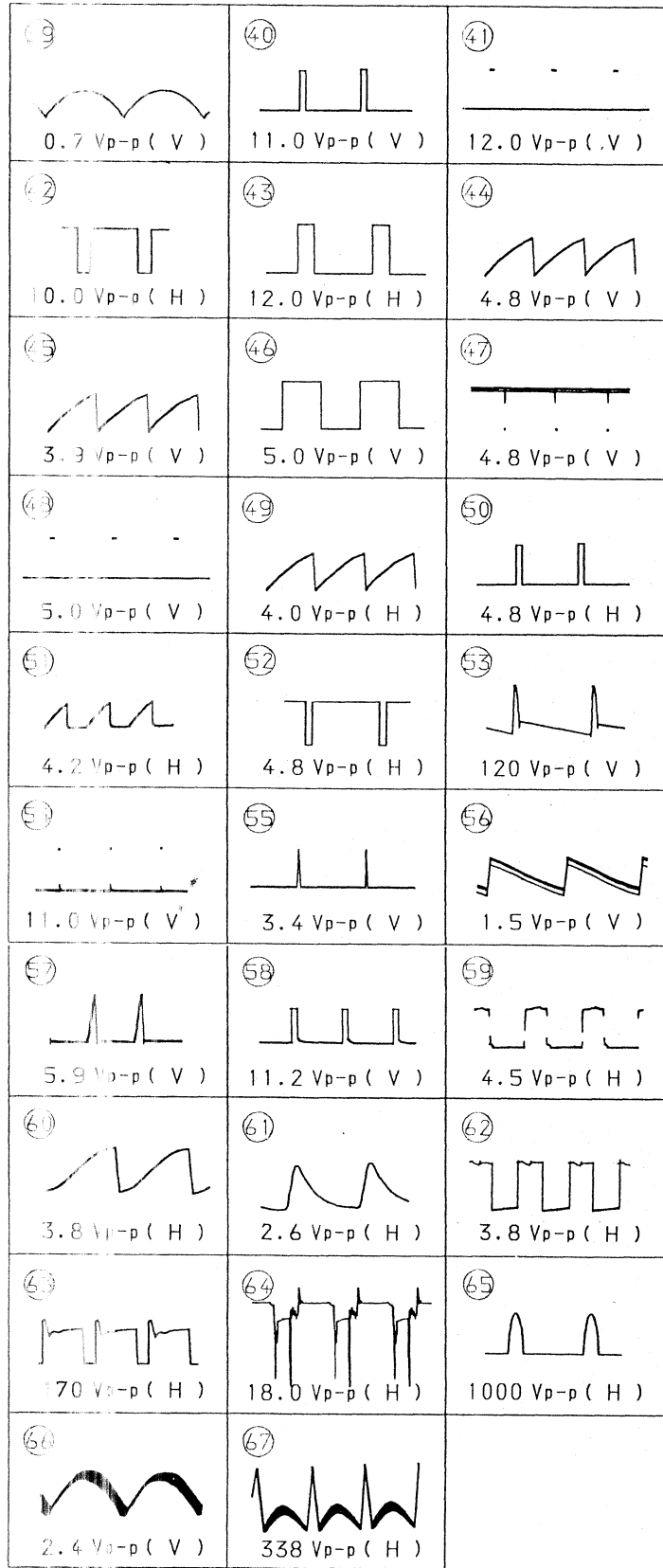








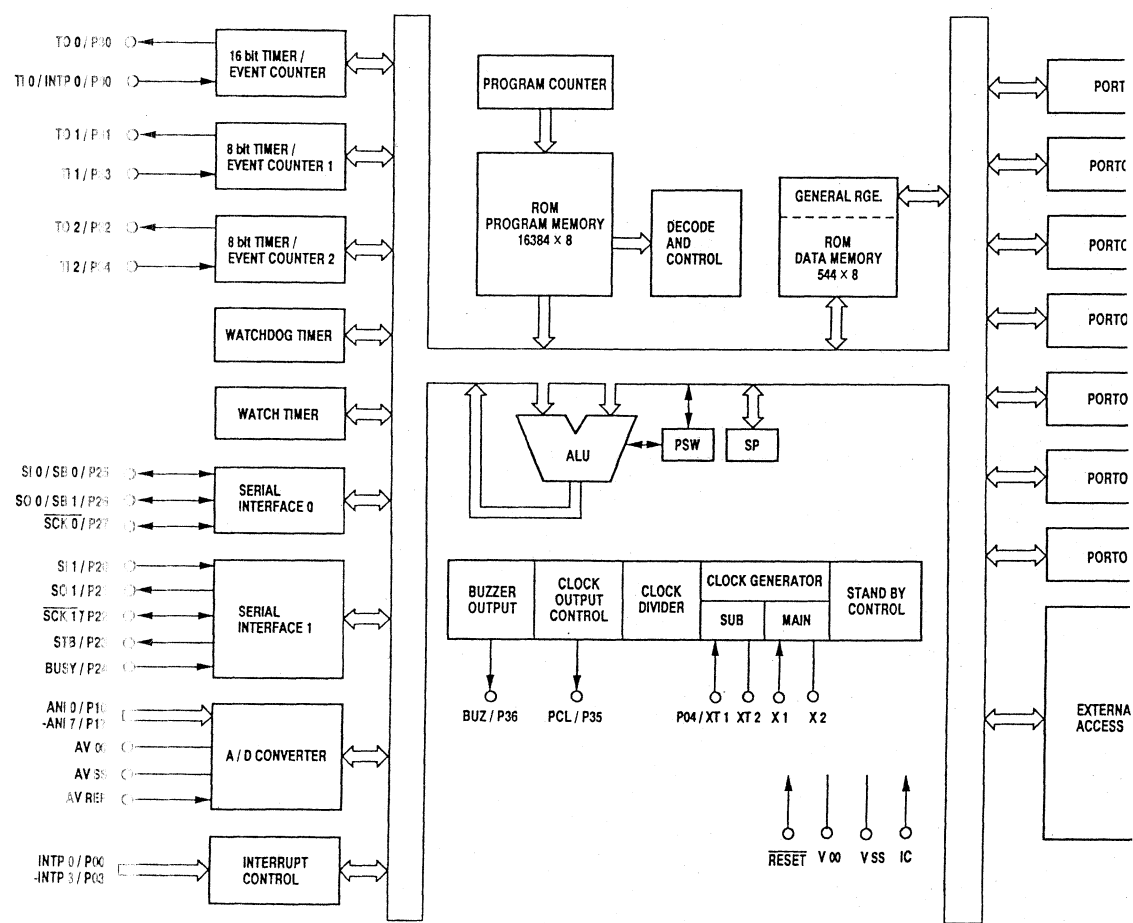
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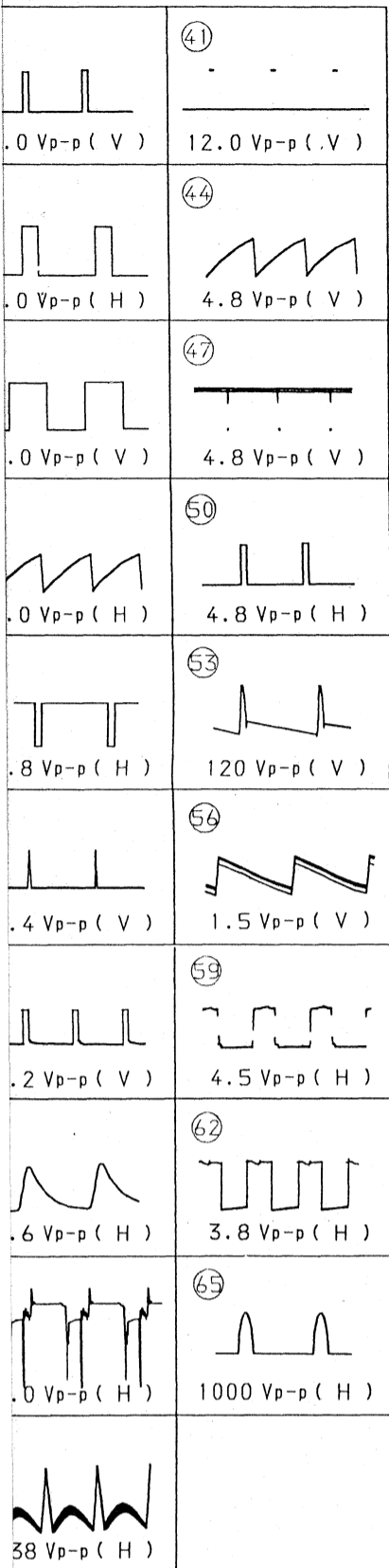


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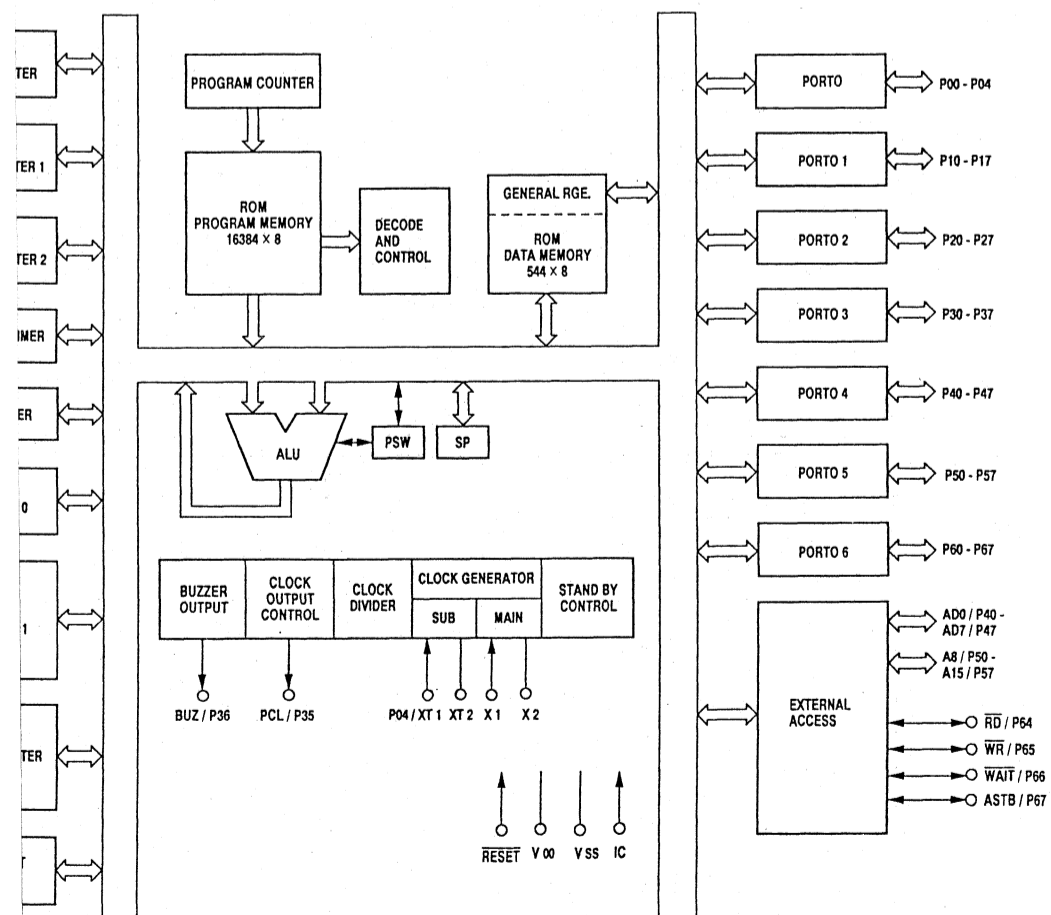
D101	PROTECT	D401	SW
D102	PROTECT	D402	SW
D103	OSP POSITION ADJ	D403	SW
D104	PROTECT	D404	SW
D105	PROTECT	D405	BLANKING
D107	PROTECT	D406	SW SLICE
D109	MUTE		
D110	MUTE SW		
D111	PROTECT		
D112	MUTE		
D113	D. C. SHIFT		
D114	SW		
D115	PROTECT		
D200	AUDIO D. C. REF		
D300	PHASE ADJ		
D301	SW		
D302	D. C. SHIFT		
D303	SECAM SW		
D304	SW		
D305	PROTECT		
D306	SW		
D307	B/W-SW		
D309	B/W-SW		
D310	CLAMP		
D311	XTAL ADJ		
D313	SW		
D314	SLICE		
D315	7.5 OPSW		
D317	LEVEL-SHIFT		
D318	PROTECT		
D319	PROTECT		
D320	SLICE		
D322	SLICE		
D323	SW		
D324	R-Y COLOR BALANCE ADJ		
D325	SW		
D326	B-Y COLOR BALANCE ADJ		
D327	SW		
D332	RGB COMP SW		
D333	SW		
D335	SW		
D336	SW		
D337	SECAM-SW		
D338	SW		
D339	SW		
D341	D. C. SHIFT		
D344	SW		
D345	OSD G CLAMP		
D346	OSD B CLAMP		
D347	OSD R CLAMP		
D348	PROTECT		
D349	PROTECT		
D350	PROTECT		
D351	PROTECT		
D352	PROTECT		
D353	PROTECT		
D354	PROTECT		
D355	PROTECT		
D360	SW		
D361	SW		
D362	D. C. SHIFT		
D363	D. C. SHIFT		
D364	SW		
D365	SECAM SW		
D380	SW		
D381	SW		
D401	SW 15		
D404	SW		
D405	BLANKING		
D406	SW SLICE		

A BOARD IC101  $\mu$ PD78012YCW





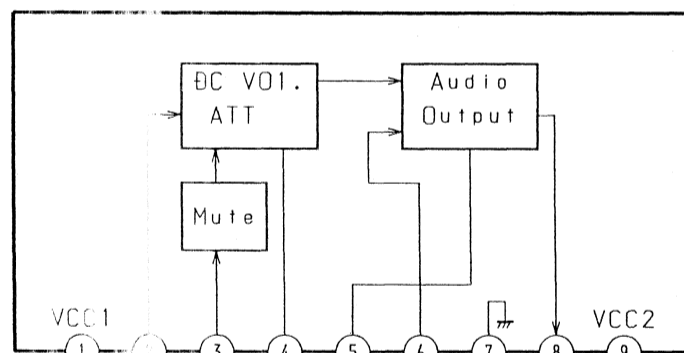
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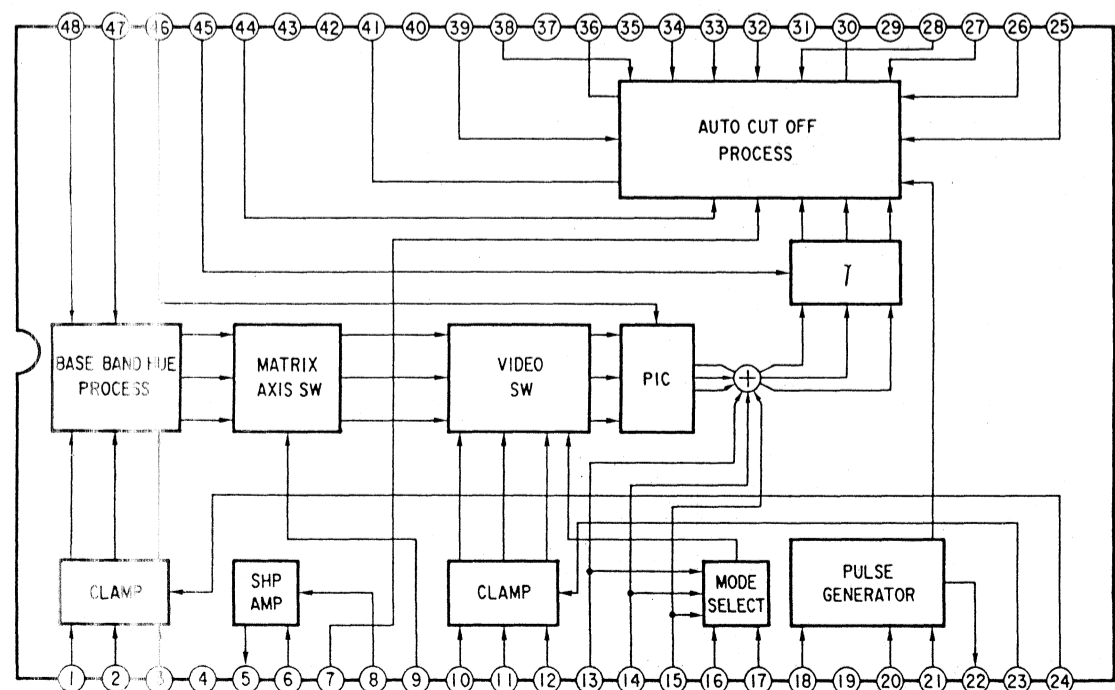
## A BOARD

D101	PROTECT	D407	RGB SW	IC109	DAC 5	Q302	BUFFER	Q401	BRIGHT ABL
D102	PROTECT	D408	BLANKING	IC110	DAC 3	Q303	VIDEO-IN-BUFF-1	Q402	PIY ABL
D103	OSP POSITION ADJ	D410	SW	IC111	EX-POU (PORI)	Q304	VIDEO-IN-BUFF-2	Q403	V-BLK-SW
D104	PROTECT	D411	SW	IC200	AUDIO-OUT	Q305	CLAMP-BUFF-1	Q404	B/O G AMP 9
D105	PROTECT	D413	SW	IC301	ACC OFF. GAIN-CONT. AMP	Q306	PAL TRAP BUFFER 1	Q405	B-BUFF 3
D107	PROTECT	D414	OSD MODE SW	IC302	PAL 60/ID2	Q307	SYNCH-CHIP-CLAMP 2	Q406	B/O G AMP 2
D109	MUTE	D415	OSD BLK-INSERT	IC303	SECAM DECOHER	Q308	CLAMP-RE 1	Q407	B/W-SW3
D110	MUTE SW	D416	OSD B MIX	IC304	SYSTEM-SW	Q309	CLAMP-BUFF-2	Q408	B/O R AMP 1
D111	PROTECT	D417	OSD G MIX	IC305	CHOROMA DEMOD	Q310	PAL TRAP BUFFER 2	Q409	B-Y-BUFF
D112	MUTE	D418	OSD R MIX	IC306	G/Y-SW	Q311	SLICER 2	Q410	Y BUFFER
D113	D. C. SHIFT	D421	SW	IC309	R/Y-SW	Q312	AMP-1	Q411	B/O R AMP 2
D114	SW	D422	SW	IC310	BLACK-INSERT	Q313	AMP-2	Q412	BCH BOFFER
D115	PROTECT	D423	CLAMP	IC311	SAMPLE	Q314	SECAA SW	Q413	BCH NORMAL SW
D200	AUDIO D. C. REF	D424	PROTECT	IC312	B/Y-SW	Q315	BUFF	Q414	R BUFFER
D300	PHASE ADJ	D425	CLAMP	IC313	SYNC SELECT	Q316	NT-COMB-D.C-REF	Q415	G BUFFER
D301	SW	D426	D. C. SHIFET	IC314	Y-SW	Q318	SYNCSF	Q416	B BUFFER
D302	D. C. SHIFT	D427	PROTECT	IC315	PULSE SELECT	Q319	Y-SW-BUFF	Q417	B-BUFF
D303	SECAM SW	D500	SPEED UP	IC316	SECAM CHOROMA SELECT	Q321	B/W-SW 2	Q418	OFF-MUTE-SW
D304	SW	D501	HV. PROTECT	IC317	H-FULSGATE	Q323	PAL SW	Q419	G BUFF 3
D305	PROTECT	D502	PIN DAMPER 1	IC318	NOT-GATE	Q324	PAL SW	Q420	R BUFF 3
D306	SW	D503	PROTECT	IC320	CHROMA BPF SELECT	Q325	SYNCSIG-BUFF	Q421	V-BLK-SW 1
D307	B/W-SW	D504	PROTECT	IC321	Y. D. L. SW	Q326	Y-AMP-1	Q422	BLANKING
D309	B/W-SW	D505	G2 RECT	IC322	G/Y SW SELECT	Q327	Y-AMP-2	Q423	BLUE BUFFER
D310	CLAMP	D506	DAMPER	IC323	B/Y SW SELECT	Q328	443 SW	Q424	BLK
D311	XTAL ADJ	D507	HD-DELAY SW	IC324	R/Y SW SELECT	Q329	358 SW	Q425	V-P BUFFER 1
D313	SW	D508	HV-DELAY SW	IC325	AUDIO SELECT	Q330	R-Y-BUFF 1	Q426	V-P BUFFER 2
D314	SLICE	D509	SW	IC326	HOLD AMP	Q331	B-Y-BUFF 1	Q428	SMARFESS BUFFER
D315	7.5 OPSW	D510	+15V-RECT	IC350	BUFFER AMP	Q332	358 SW	Q429	IK BUFFER
D317	LEVEL-SHIFT	D512	PIN-DAMPER 2	IC401	BLUE-ONCK GAIN-CONT AMP	Q333	SYNCS-BUFF	Q430	IK BLK
D318	PROTECT	D513	H. BLK	IC402	R/Y GAINCONT AMP	Q334	BELL-FIL BUFFER	Q431	RESET MUTE SW
D319	PROTECT	D514	+24V-RECT	IC403	BLACK-SAMPLING	Q335	HV-DOUAY SW	Q432	BRIGHT MUTE SW
D320	SLICE	D515	+170V-RECT	IC404	RG3-MATRIX	Q336	ID SW	Q433	RGB SW
D322	SLICE	D516	H. BLK	IC405	BLON-SW 1	Q337	BELL-FIL BUFFER	Q434	MUTE RGB SW
D323	SW	D517	SW	IC406	HOLD 2	Q338	V-SYNC SSP 1	Q435	OSD DOWN SW
D324	R-Y COLOR BALANCE ADJ	D518	PROTECT	IC407	HEK SW 2	Q339	V-SYNC SSP 2	Q436	OSD DOWN SW
D325	SW	D519	V. SYNC	IC408	EDGE DETECT	Q341	G/Y BUFFER	Q437	OSD DOWN SW
D326	B-Y COLOR BALANCE ADJ	D520	MICOM V SW	IC409	ON/OFF MUTE	Q342	R/Y BUFFER	Q438	BLUE ONLY SW
D327	SW	D522	D. C. UP	IC410	SIG SELECT	Q343	B/Y-BUFFER	Q439	BCH B/O DLY-EQ 1
D332	RGB COMP SW	D523	BIAS	IC411	COUNTER	Q345	MUTE SW	Q440	BCH B/O DLY-EQ 2
D333	SW	D524	H. CENT	IC412	VOL OFF SW 4	Q346	ID SW	Q441	BCH B/O SW
D335	SW	D525	H. CENT	IC413	VOL OFF SW 2	Q347	SECAM SW	Q442	BCH BUFFER
D336	SW	D526	50 / 60 SW	IC502	V-DELAY MONO-MULTI	Q348	R-Y BUFFER	Q443	AUTO CMROMA SET UP AMP 1
D337	SECAM-SW	D527	D. C. LIMITTER	IC503	H-DELAY MONO-MULTI	Q349	B-Y BUFFER	Q444	AUTO CMROMA SET UP AMP 2
D338	SW	D528	POMP-OP2	IC504	V GAINCONT AMP 2	Q350	INSERT-PULSE-SW	Q445	BLUE ONLY SW
D339	SW	D529	SW	IC505	+12V REC	Q351	G/Y-BUFF-2	Q500	CURR-LIN 2
D341	D. C-SHIFT	D530	POMP-OP1	IC506	H-BLK MONO-MULTI	Q352	R/Y-BUFF-2	Q501	H-OUT
D344	SW	D531	12V REF 1	IC507	DIRECTON	Q353	B/Y-BUFF-2	Q502	H-DRIVE
D345	OSD G CLAMP	D532	12V REF 2	IC508	V GAINCONT AMP 1	Q354	B/W-SW2	Q503	PIN-OUT
D346	OSD B CLAMP	D533	PROTECT RECT	IC509	PINCOM	Q355	258 TRIP SW	Q505	H. BLK 1
D347	OSD R CLAMP	D534	SW	IC510	16:9 V-BLK MON-MULTI	Q356	MUTE SW	Q506	V. ZOOMING
D348	PROTECT	D535	BIAS			Q357	ACC OFF AMP	Q507	H. BLK2T1
D349	PROTECT	D536	BIAS			Q358	ACC OFF SW	Q508	50/60 SW
D350	PROTECT	D537	PROTECT			Q359	ACC ON SW	Q509	DIGITAL V SW
D351	PROTECT	D538	PROTECT			Q360	HOLD	Q511	CURR-LIN 1
D352	PROTECT	D239	SW			Q361	EXT-SYNC SW	Q512	V-DRIVE
D353	PROTECT	D540	V-BLK SW 1			Q362	OSD SW	Q513	V. OUT 1
D354	PROTECT	D541	V-BLK SW 2			Q363	TEST BUFFER	Q514	50/60 SW
D355	PROTECT					Q364	V-PULSU SW	Q515	V. OUT 2
D360	SW					Q365	MUTE SW	Q517	H-V PHASE LOCK SW
D361	SW	IC101	MICOM			Q366	BRIGHT UP SW 1	Q518	U/S SW 1
D362	D. C. SHIFT	IC102	ECROM			Q367	BRIGHT UP SW 2	Q519	U/S SW 2
D363	D. C. SHIFT	IC103	EXOR			Q368	BRIGHT UP SW 3	Q520	12V REG
D364	SW	IC104	ON SCREEN DISPLAY			Q369	RGB SW	Q522	H. P. BUFFER
D365	SECAM SW	IC105	DAC 1			Q372	RGB SW	Q523	V-CENT CONT
D380	SW	IC106	DAC 2			Q373	RGB MODE SW	Q524	V-CENT OUT 2
D381	SW	IC107	DAC 4			Q374	RGB MODE SW	Q525	V-CENT OUT 1
D401	SW 15	IC108	MICOM RESET			Q375	RGB MODE SW	Q526	FBT-12V FAILURE SW
D404	SW					Q376	MUTE SW	Q527	C528 FAILURE SW
D405	BLANKING					Q377	DIGITAL MODE SW 1		
D406	SW SLICE					Q378	DIGITAL MODE SW 2		

## A BOARD IC200 AN5265



## A BOARD IC404 CXA1478



Schematic diagrams

Schematic diagram

boards →

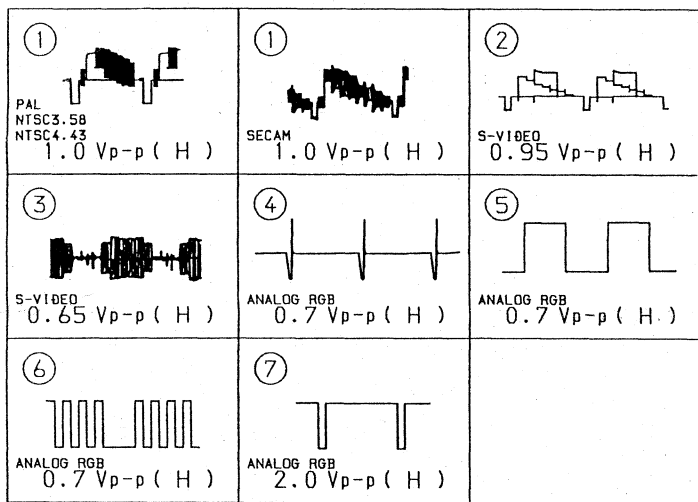
← A (3/3) board

Q X

A  
B  
C  
D  
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G  
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I  
J  
K  
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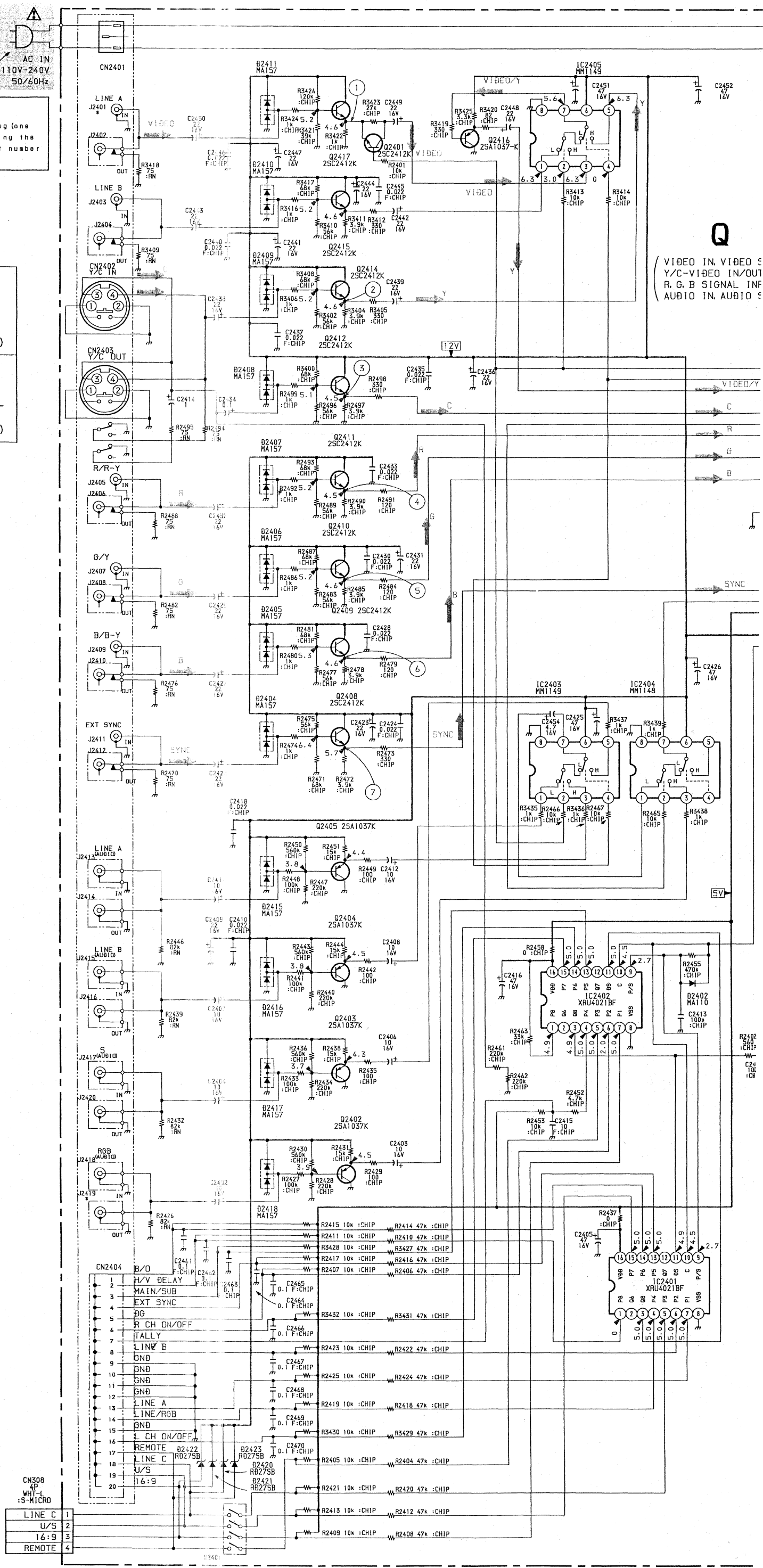
**CAUTION (US MODEL ONLY)**  
This set is equipped with a polarized ac power cord plug (one blade of the plug is wider than the other). When replacing the ac power cord, be sure to connect it with specified part number as shown in this diagram.

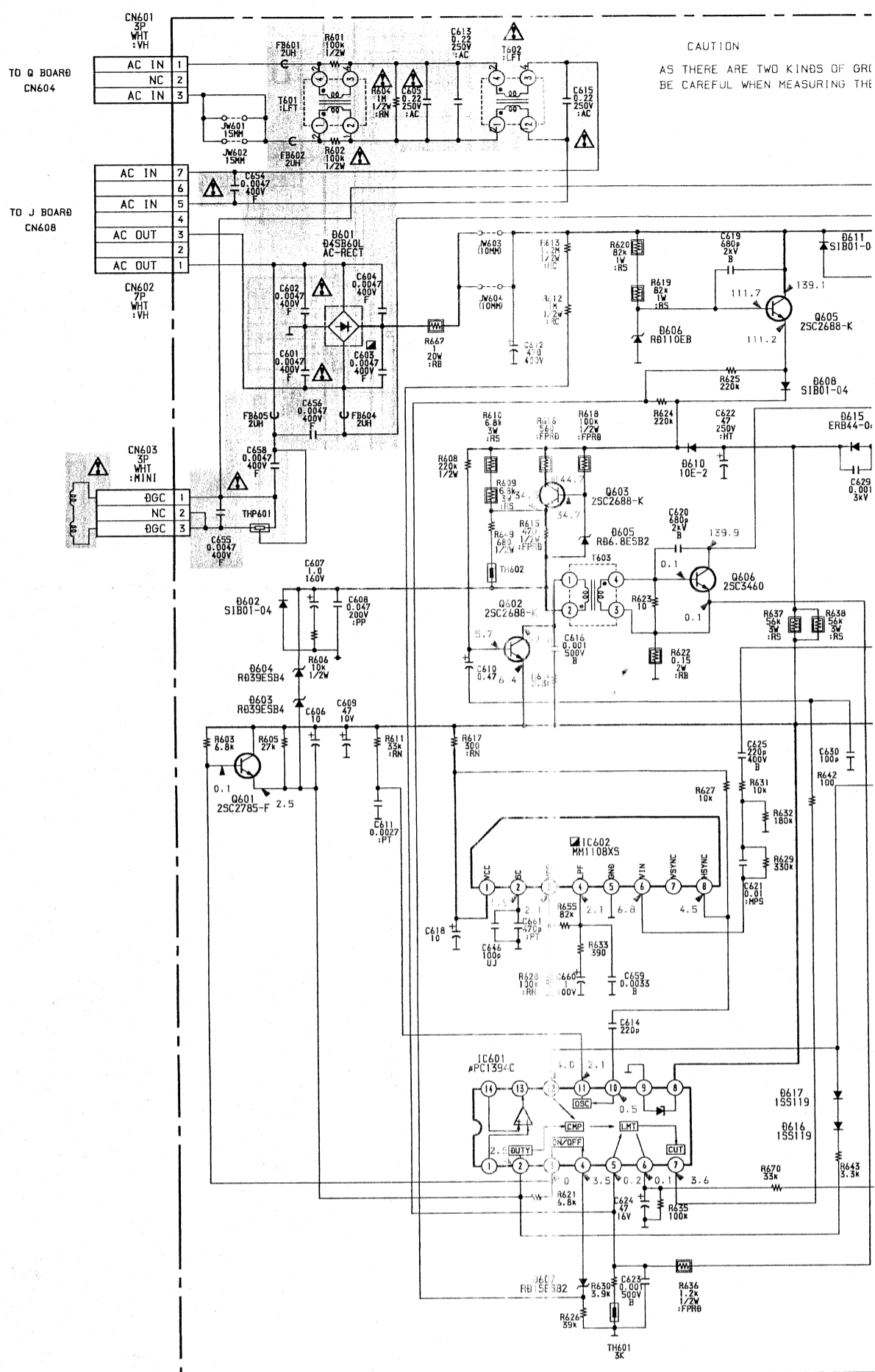
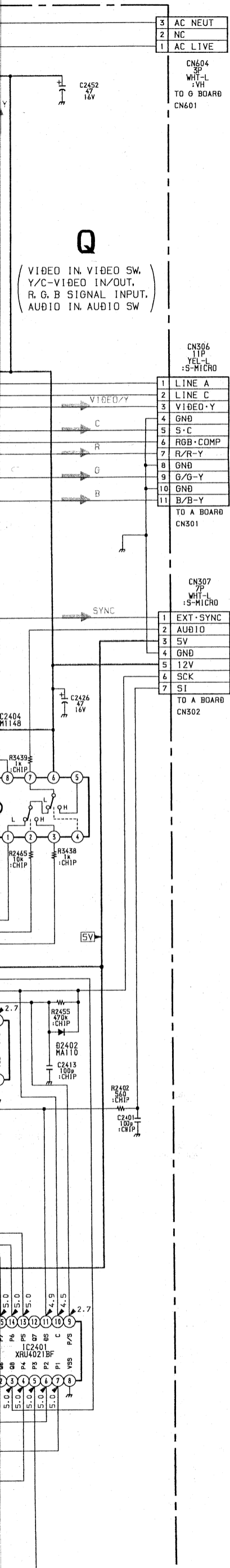
• Q BOARD WAVEFORMS



Q BOARD

D2402	SPEED UP
D2404	PROTECT
D2405	PROTECT
D2406	PROTECT
D2407	PROTECT
D2408	PROTECT
D2409	PROTECT
D2410	PROTECT
D2411	PROTECT
D2415	PROTECT
D2416	PROTECT
D2417	PROTECT
D2418	PROTECT
D2420	PROTECT
D2421	PROTECT
D2422	PROTECT
D2423	PROTECT
IC2401	SHIFT REGISTER
IC2402	SHIFT REGISTER
IC2403	AUDIO SW
IC2404	AUDIO SW
IC2405	VIDEO SW
Q2402	(A . RGB . BUFFER)
Q2403	(A . S . BUFFER)
Q2404	(A . B . BUFFER)
Q2405	(A . A . BUFFER)
Q2408	(S . B . BUFFER)
Q2409	(B . BUFFER)
Q2410	(G . BUFFER)
Q2411	(R . BUFFER)
Q2412	(C . BUFFER)
Q2414	(Y . BUFFER)
Q2415	(V . B . BUFFER)
Q2416	VIDEO IN BUFFER
Q2417	(V . A . BUFFER)
Q2418	16 : 5 COIET

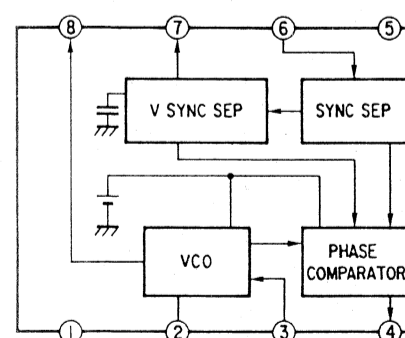


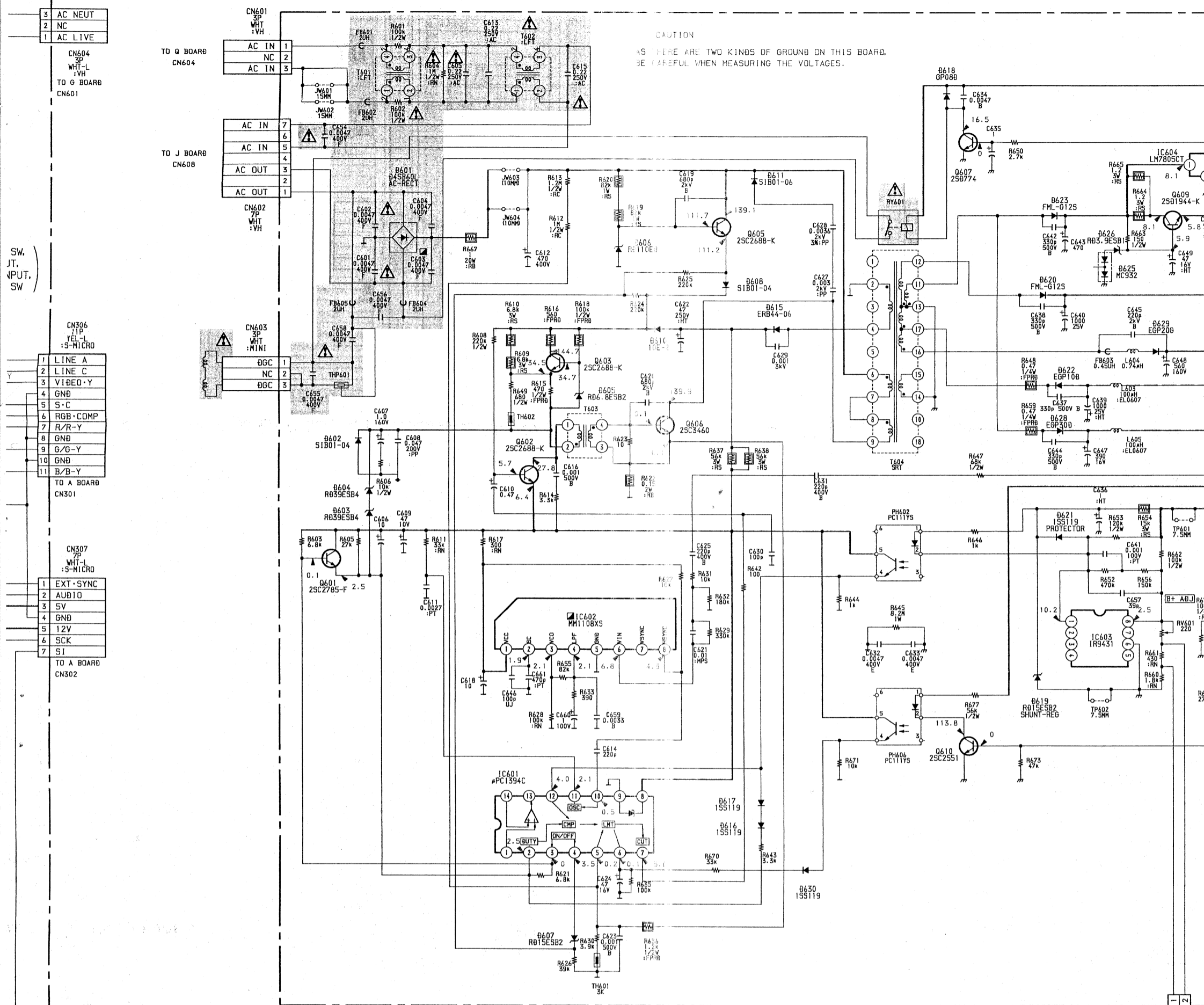


## G BOARD

D601	AC-RECT
D602	PROT
D603	EX-VOL-PROT 1
D604	EX-VOL-PROT 1
D605	CURRENT-CONS
D606	KICK-VOLTAGE
D607	LOW-VOL
D608	KICK
D610	PRIM-VCC
D611	AC-CLIPPER
D615	REC-PRIM-VCC
D616	SOFT-START 1
D617	SOFT-START 2
D618	PROTECT
D619	SHUNT-REG
D620	15V-RECT
D621	PROTECTOR
D622	- 15V-RECT
D623	5V-RECT
D625	5V-RECT 2
D626	5V-RECT 1
D628	7V-RECT
D629	115V-RECT
D630	SW
D631	BIAS
IC601	REF-PWM
IC602	H-AFC
IC603	SHUNT-REG
Q601	RESET
Q602	DRIVE
Q603	CURRENT
Q605	STRAT
Q606	CONVERTER
Q607	DGC DRIVE
Q609	5VB REG
Q610	FAILURE
Q611	OVER CURRENT DETECTOR

G BOARD IC602 MM1108XS

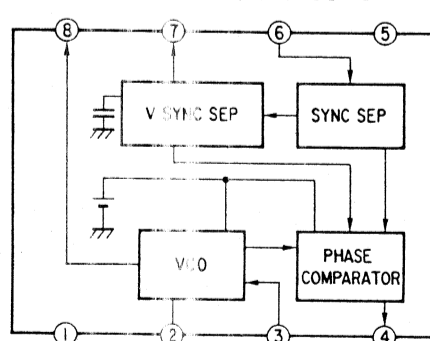


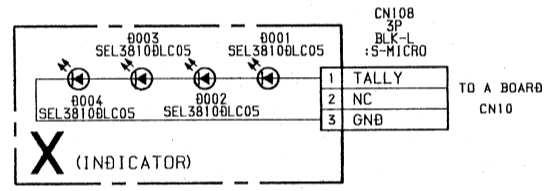
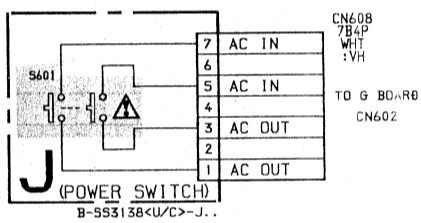
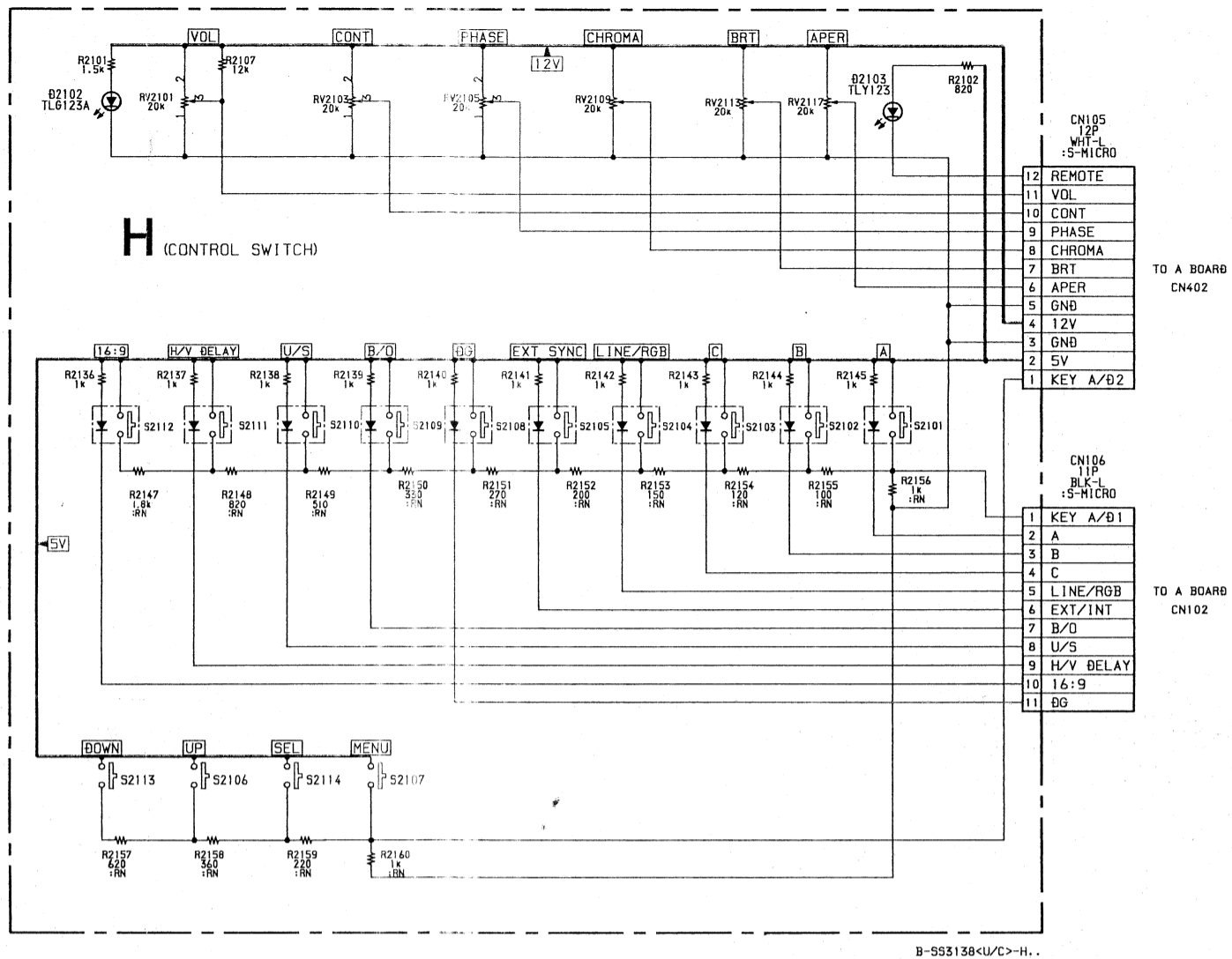
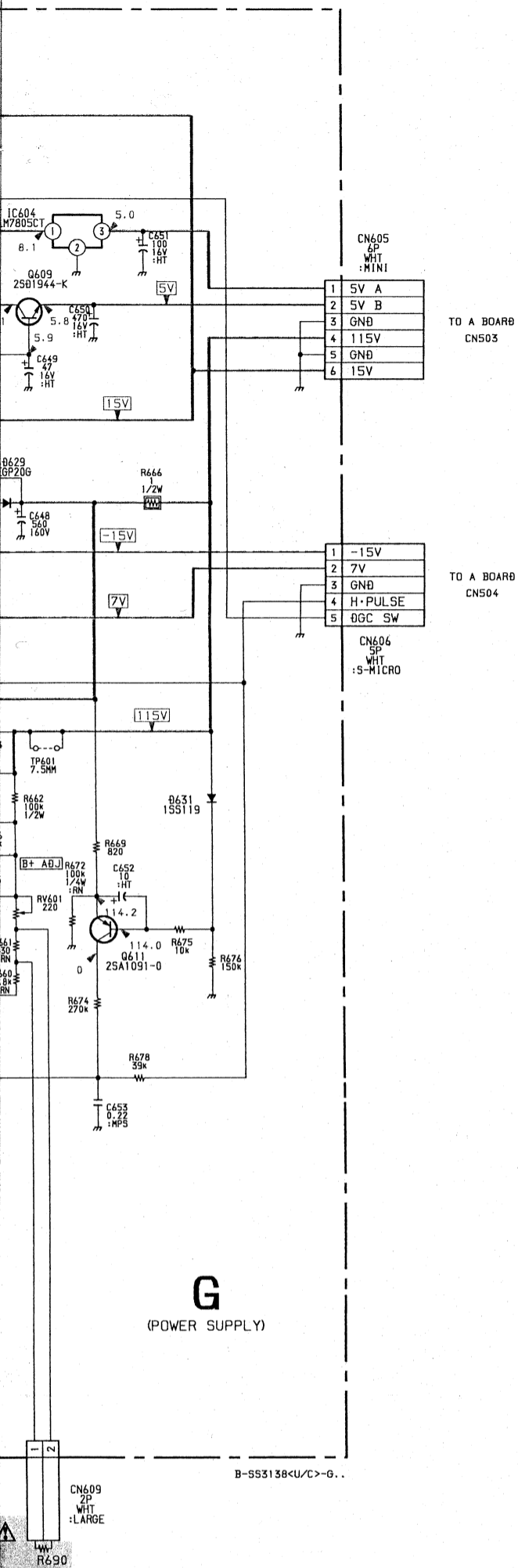


## G BOARD

D601	AC-RECT
D602	PROT
D603	EX-VOL-PROT 1
D604	EX-VOL-PROT 1
D605	CURRENT-CONS
D606	KICK-VOLTAGE
D607	LOW-VOL
D608	KICK
D610	PRIM-VCC
D611	AC-CLIPPER
D615	REC-PRIM-VCC
D616	SOFT-START 1
D617	SOFT-START 2
D618	PROTECT
D619	SHUNT-REG
D620	15V-RECT
D621	PROTECTOR
D622	- 15V-RECT
D623	5V-RECT
D625	5V-RECT 2
D626	5V-RECT 1
D628	7V-RECT
D629	115V-RECT
D630	SW
D631	BIAS
IC601	REF-PWM
IC602	H-AFC
IC603	SHUNT-REG
Q601	RESET
Q602	DRIVE
Q603	CURRENT
Q605	STRAT
Q606	CONVERTER
Q607	DGC DRIVE
Q609	5VB DRIVE
Q610	FAILURE
Q611	OVER CURRENT DETECTOR

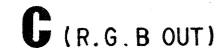
G BOARD IC602 MM1108XS





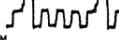
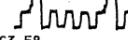
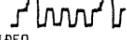
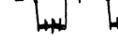
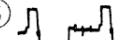
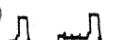
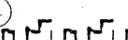
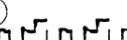
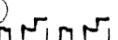
**X BOARD**

D001	TALLY LED 1
D002	TALLY LED 2
D003	TALLY LED 3
D004	TALLY LED 4

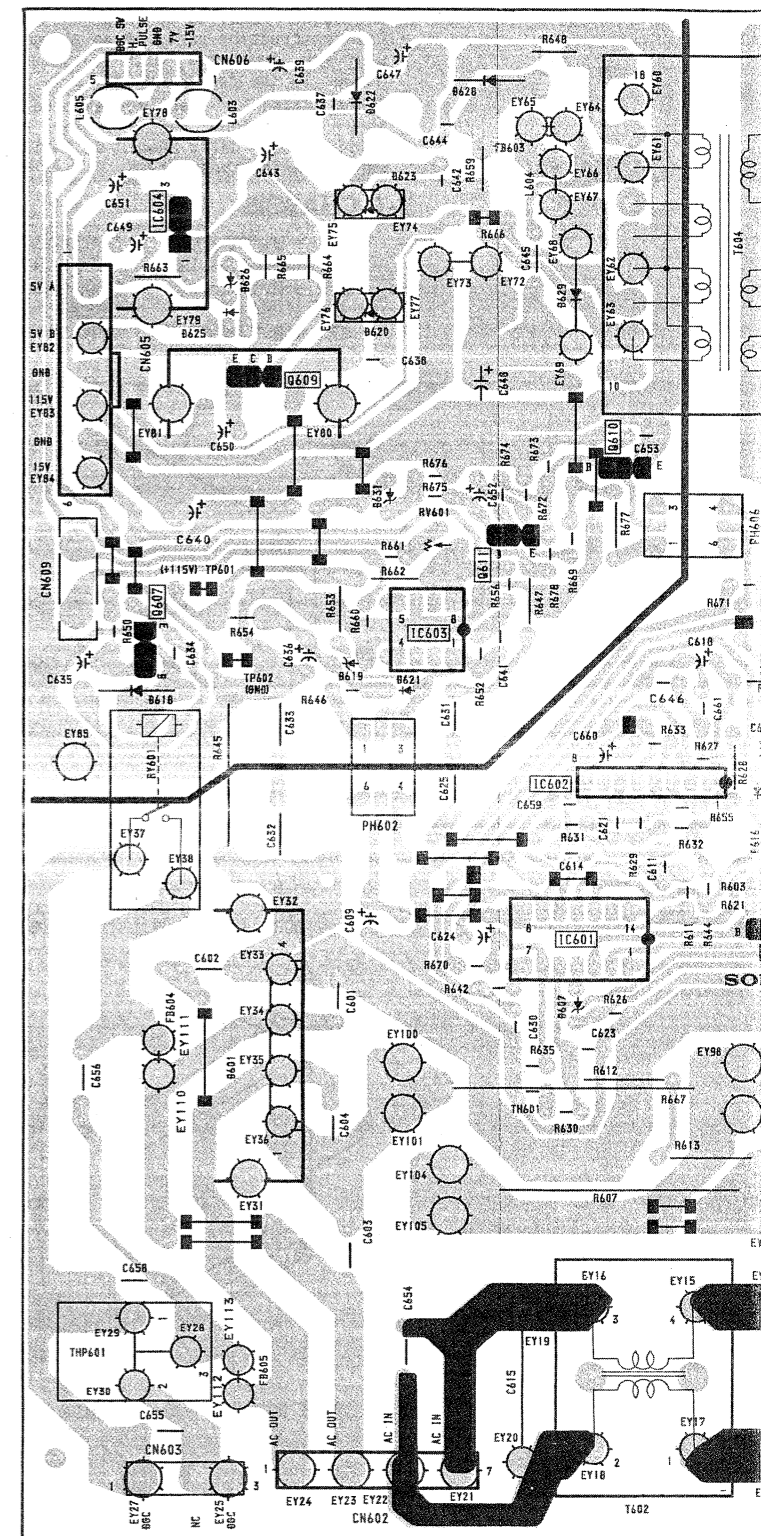


		PAL	SECAM	NTSC 3.58	NTSC 4.43	S-VIDEO	ANALOG
Q701	B	2.0	1.9	1.73	1.8	1.8	2.0
	E	1.4	1.3	1.1	1.1	1.2	1.4
Q702	B	2.0	1.9	1.7	1.7	1.8	2.0
	E	1.5	1.3	1.1	1.1	1.2	1.4
Q703	B	1.9	1.8	1.6	1.6	1.8	1.9
	E	1.3	1.2	1.0	1.0	1.2	1.3
Q704	B	143.6	148.0	153.9	153.4	144.9	143.8
	C	129.0	134.3	135.4	134.5	31.2	111.5
	F	138.7	144.4	150.3	149.6	140.4	140.1
Q705	B	141.7	145.8	154.9	154.2	145.0	141.8
	C	124.9	130.2	132.3	130.4	60.4	106.6
	F	139.2	142.8	151.9	150.6	140.7	138.5
Q706	B	145.7	151.5	160.4	159.8	144.9	148.6
	C	124.0	130.3	131.2	131.1	103.2	114.7
	E	140.2	146.0	157.1	156.4	140.8	145.0
Q707	C	143.8	148.0	154.0	153.4	144.9	143.7
Q708	C	141.9	145.9	155.2	154.3	145.0	141.8
Q709	C	149.8	151.5	160.6	159.9	144.9	148.5
Q710	B	172.8	173.1	174.3	173.9	167.0	173.5
	E	160.9	164.0	162.9	162.2	154.0	161.2
Q711	B	172.8	173.2	174.3	173.9	167.0	173.5
	C	160.6	161.0	162.3	161.8	154.1	161.3
Q712	B	172.9	173.2	174.0	174.2	167.0	173.5
	E	161.6	163.6	164.1	164.8	154.5	161.4
Q713	B	172.8	173.2	173.9	173.9	166.8	173.5
	C	184.2	184.5	184.7	184.6	176.6	183.8
	E	173.3	173.6	174.3	174.3	167.2	173.9
Q714	C	173.6	173.7	174.5	174.4	167.4	174.1
Q715	B	146.7	148.6	157.6	157.0	140.3	145.7
	C	149.5	151.5	160.6	159.9	144.9	148.5
	E	146.1	148.0	157.2	156.5	140.7	145.0
Q716	B	139.2	143.3	152.5	151.5	140.7	139.4
	C	141.7	145.8	155.2	154.2	145.1	141.8
	E	138.2	142.3	151.4	150.5	140.6	138.4
Q717	B	140.9	145.4	151.7	150.8	140.6	141.2
	C	143.6	148.0	154.1	153.4	144.9	143.8
	E	139.8	144.4	150.5	149.6	140.4	140.0

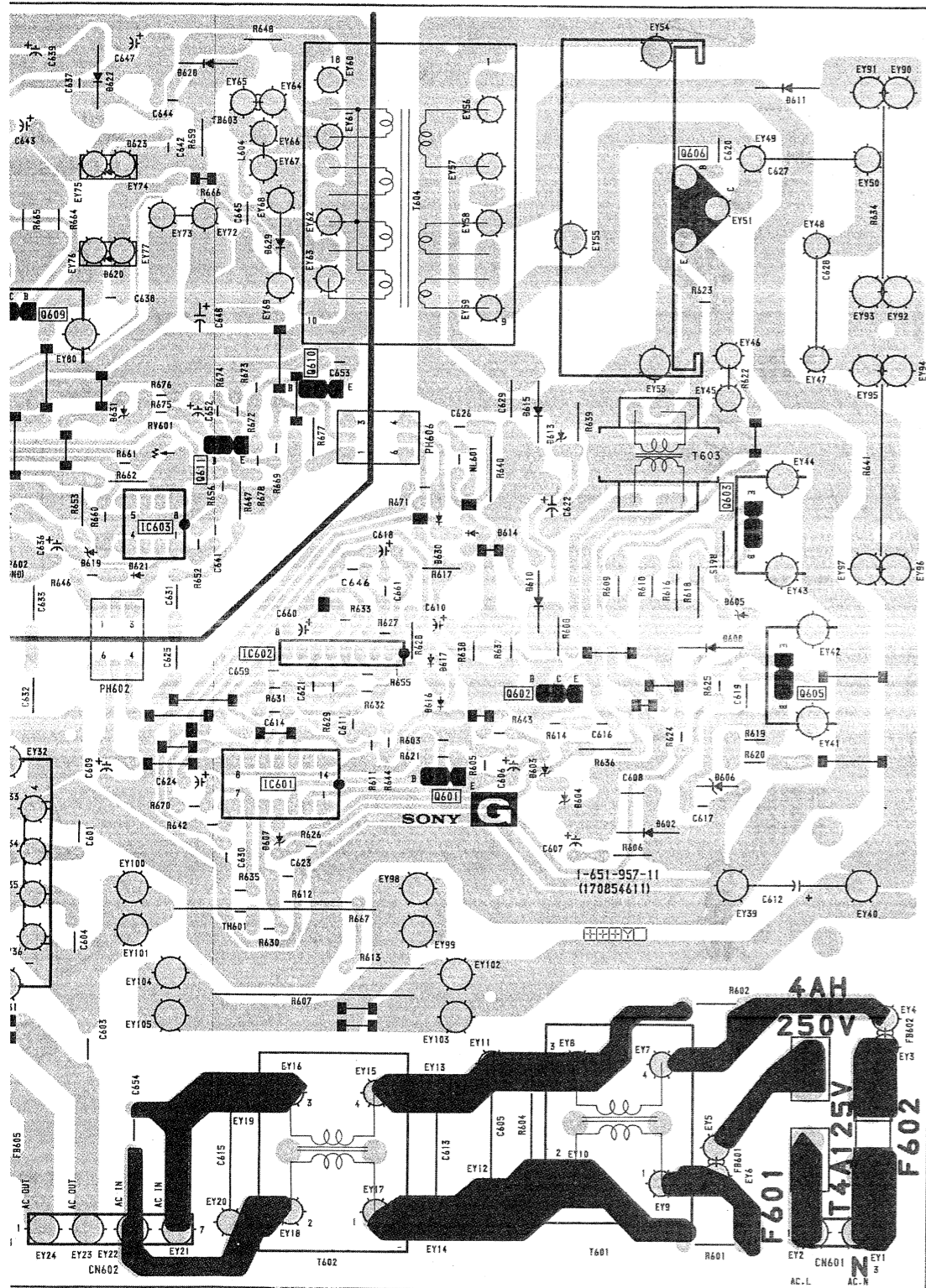
Q701	B DRIVE
Q702	G DRIVE
Q703	R DRIVE
Q704	B BUFF
Q705	G BUFF
Q706	R BUFF
Q707	B OUT
Q708	G OUT
Q709	R OUT
Q710	IK SW 1
Q711	IK SW 2
Q712	IK SW 3
Q713	V. BLK OUT
Q714	V. BLK INT
Q715	TRACE SW 1
Q716	TRACE SW 2
Q717	TRACE SW 3

<p>①</p>  <p>23.0 Vp-p (H)</p>	<p>②</p>  <p>SECAM 98.0 Vp-p (H) PAL 96.0 Vp-p (H)</p>	<p>②</p>  <p>NTSC5.98 82.0 Vp-p (H) NTSC4.43 80.0 Vp-p (H)</p>	<p>②</p>  <p>S-VIDEO 69.0 Vp-p (H) ANALOG RGB 88.0 Vp-p (H)</p>	<p>③</p>  <p>PAL 93.0 Vp-p (H) SECAM 89.0 Vp-p (H)</p>
<p>③</p>  <p>NTSC3.58, 4.43 70.0 Vp-p (H)</p>	<p>③</p>  <p>S-VIDEO 78.0 Vp-p (H) ANALOG 102 Vp-p (H)</p>	<p>④</p>  <p>PAL 90.0 Vp-p (H) SECAM 89.0 Vp-p (H)</p>	<p>④</p>  <p>NTSC3.58, 4.43 73.0 Vp-p (H)</p>	<p>④</p>  <p>S-VIDEO 78.0 Vp-p (H) ANALOG RGB 88.0 Vp-p (H)</p>

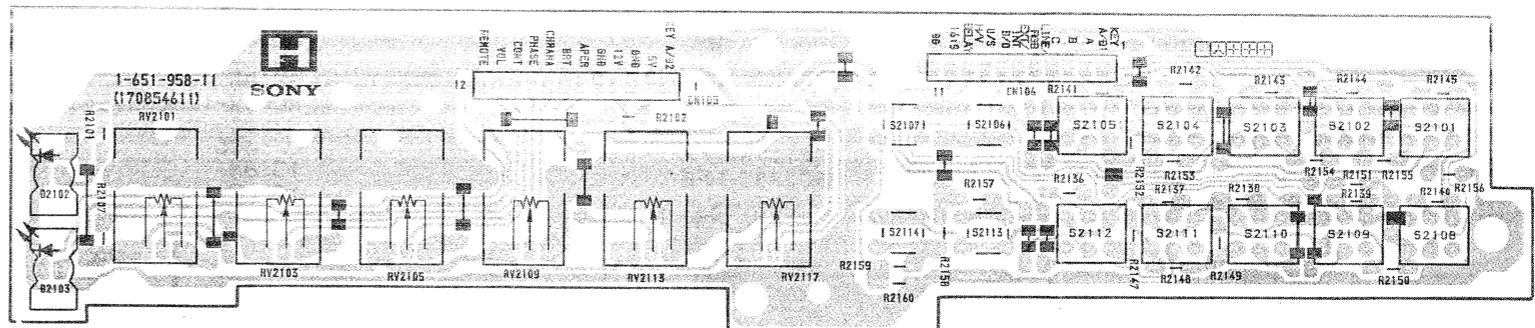
– G BOARD –



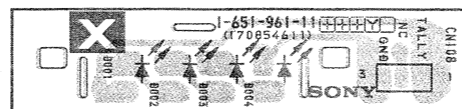
– Q BOARD –



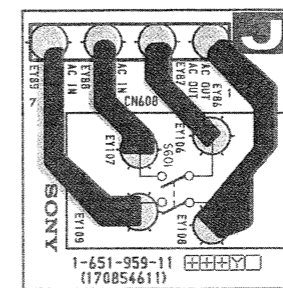
— H BOARD —



— X BOARD —

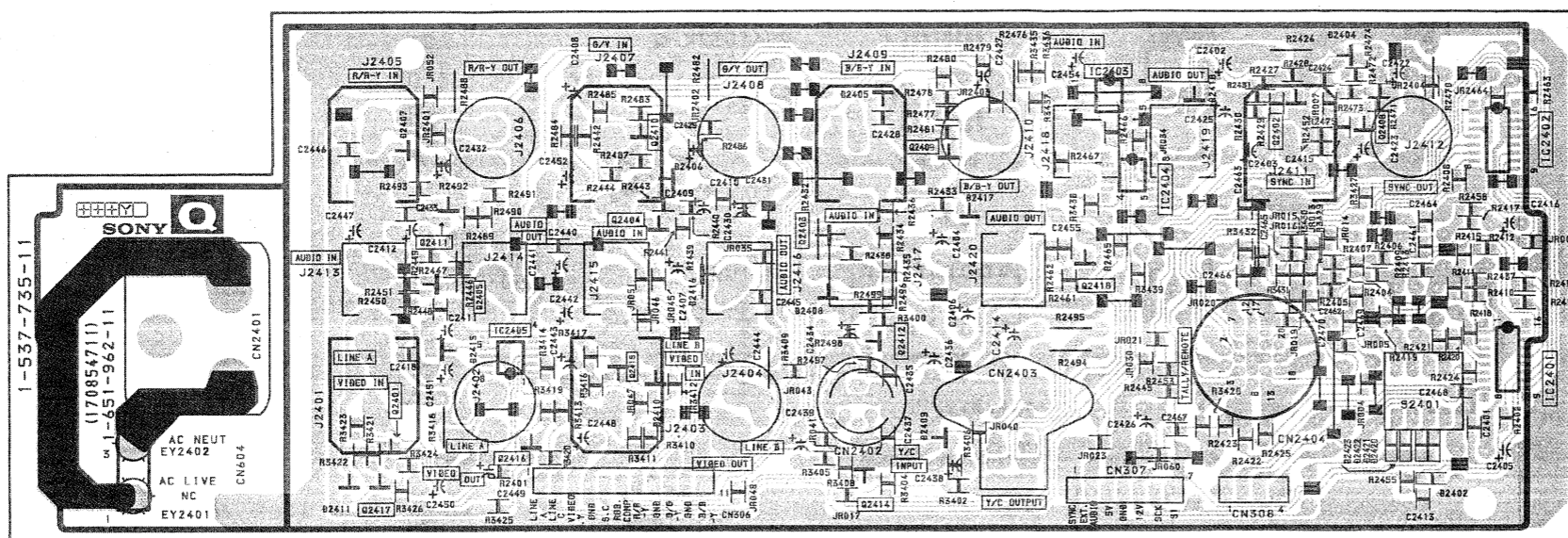
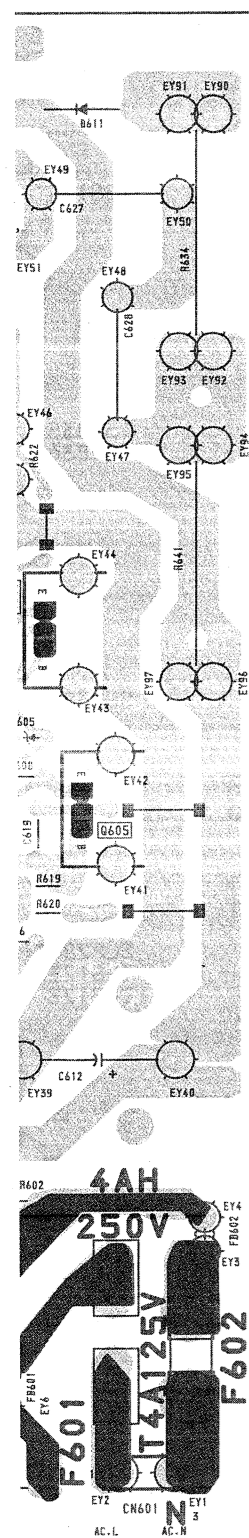


– J BOARD –

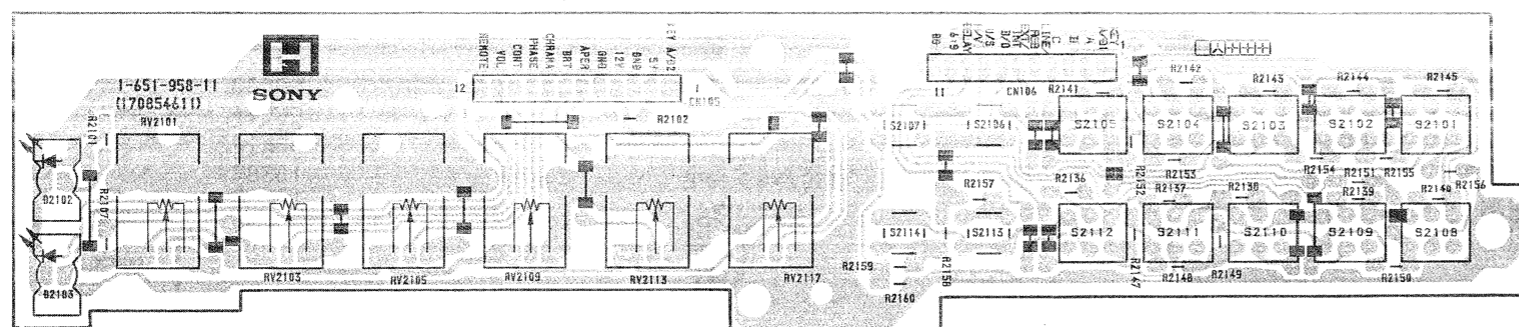


CONTROL SWITCH **X** [INDICATOR] **J** [POWER SWITCH] **C** [R. G. B OUT]

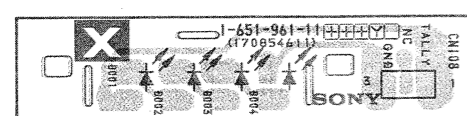
– Q BOARD –



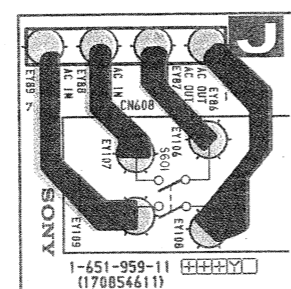
— H BOARD —



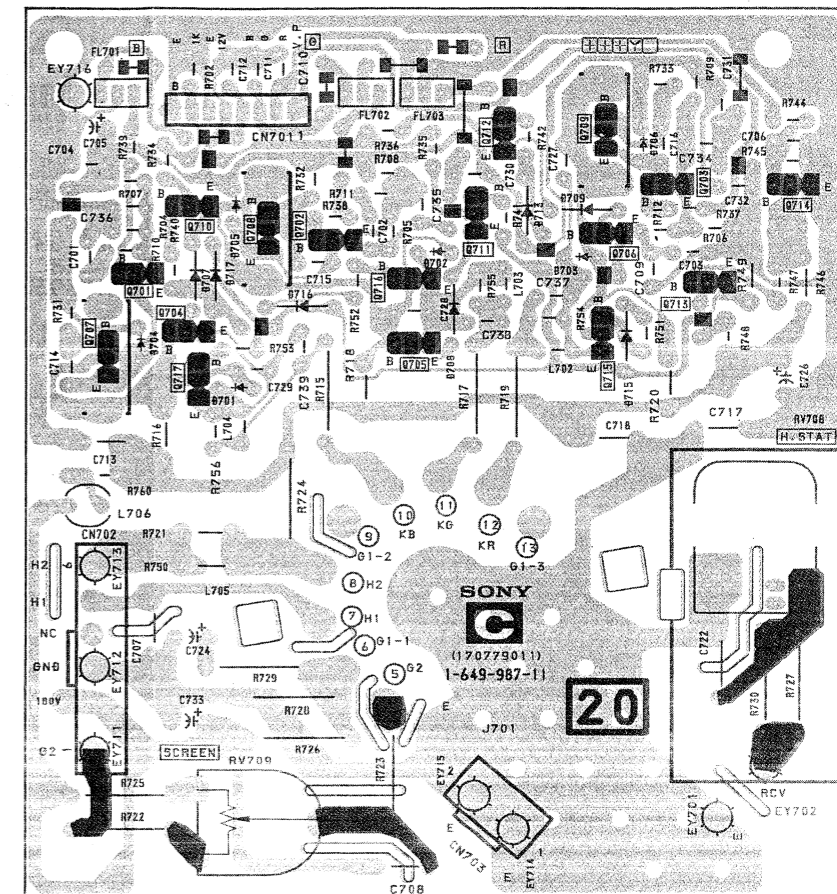
— X BOARD —



– J BOARD –



**— C BOARD —**

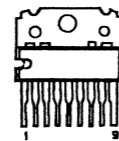


### Schematic diagram

← **C** board

## 6-5. SEMICONDUCTORS

AN5265



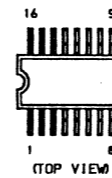
LM7805CT



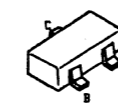
M62358FP-E1



XRU4052BF



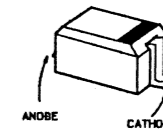
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 2TC124EK  
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 2SA1037K-Q  
 2SA1162-G  
 2SC1623-L5L6  
 2SC2412K



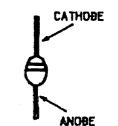
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 2SD1397-CA



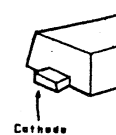
2TZ11B  
 2TZ13C  
 2TZ3.6A  
 2TZ5.6B  
 2TZ6.2  
 MA110  
 RD4.7SB  
 1SV232-TPH3  
 1SV230-TPHR3



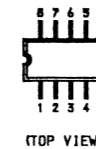
ERC38-06  
 V19E  
 V19G



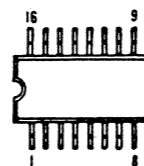
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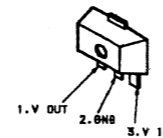
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 XRA10393F



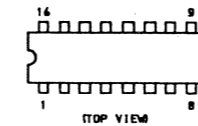
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S-80743AL-A7-S



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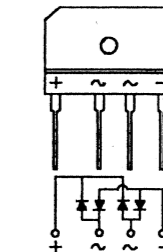
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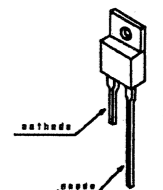
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 2SD774-34



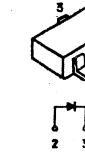
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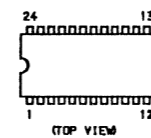
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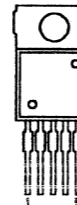
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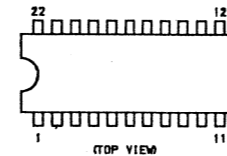
CXA1214P



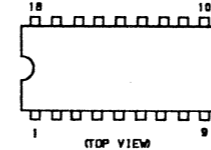
MC14538BF



μPC1377C



Z8612812PSC



IMX1



2SD1134-C  
 2SD1944-K



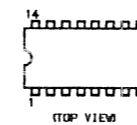
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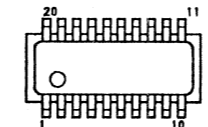
MM1108XS



μPC1394C



μPD6451AGT-632-E2  
 μPD6451AGT-629-E2



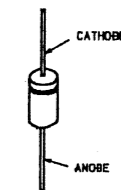
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 2SC25510  
 2SC2551-R0



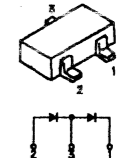
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 2SC2785-HFE



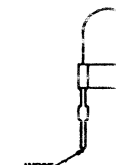
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 EGP30D  
 EGP20G  
 EL1Z  
 ERB44-06  
 GP08D  
 RGP02-17EL-6433  
 RGP10GPKG23  
 UF5406  
 1SS83  
 10E-2



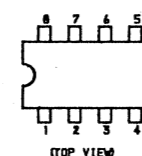
MA157  
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SEL3810DL



IR9431  
 ST24C02AB1



MM1148XF  
 MM1149XF



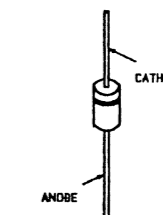
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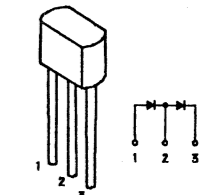
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 2SC2688-LK  
 2SC2690A-Q



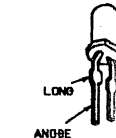
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 RH-1A  
 RH-1Z  
 RU-3AM  
 SIB01-04  
 SIB01-06



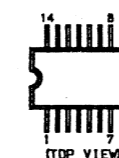
MC932



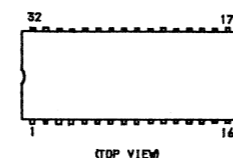
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 TLG123A  
 TLY123



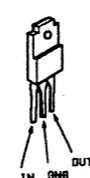
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 XRU4584BF



M51279FP

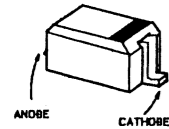


XRA17812T

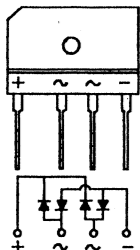


SECTION 7  
EXPLODED VIEWS

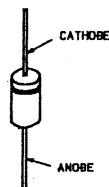
ØTZ11B  
ØTZ13C  
ØTZ3.6A  
ØTZ5.6B  
ØTZ6.2  
MA110  
RØ4.7SB  
1SV232-TPH3  
1SV230-TPHR3



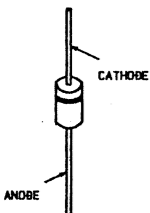
Ø4SB60L



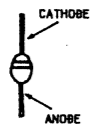
EGP10Ø  
EGP30Ø  
EGP20G  
EL1Z  
ERB44-06  
GP08Ø  
RGP02-17EL-6433  
RGP10GPKG23  
UF5406  
1SS83  
10E-2



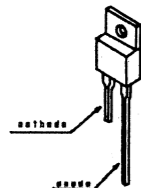
ERC06-15S  
RH-1A  
RH-1Z  
RU-3AM  
SIB01-04  
SIB01-06



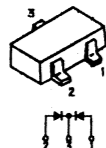
ERC38-06  
V19E  
V19G



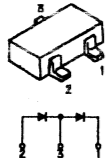
FML-G12S



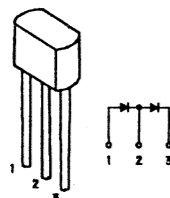
MA151WK



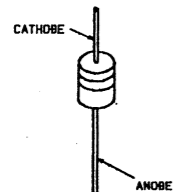
MA157  
1SS226



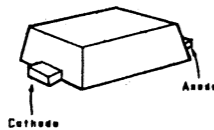
MC932



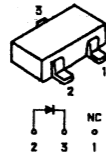
RØ110EB  
RØ15ES-B2  
RØ3.9ES-B1  
RØ39ES-B4  
RØ6.8ES-B2  
1SS119



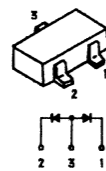
RØ10SBL



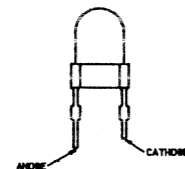
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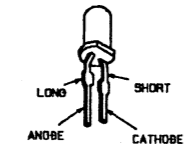
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1S2836



SEL3810ØLC05



SLP281C-50  
TLG123A  
TLY123



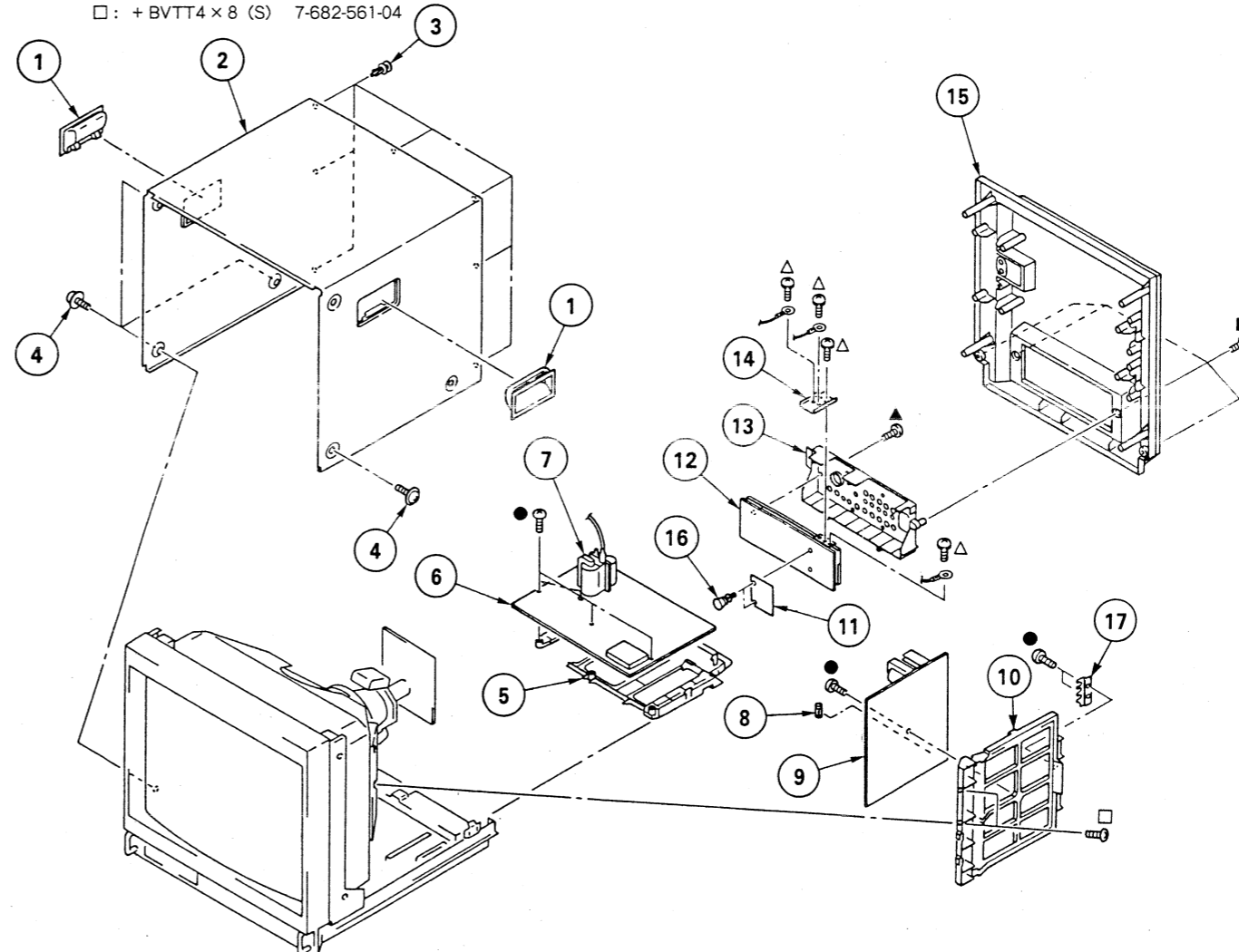
## NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

## 7-1. CHASSIS

- ▲ : + BVTP3 × 8 7-685-646-79  
● : + BVTP3 × 12 7-685-648-79  
■ : + BVTP4 × 16 7-685-663-79  
△ : + PS4 × 8 7-682-661-09  
□ : + BVTT4 × 8 (S) 7-682-561-04

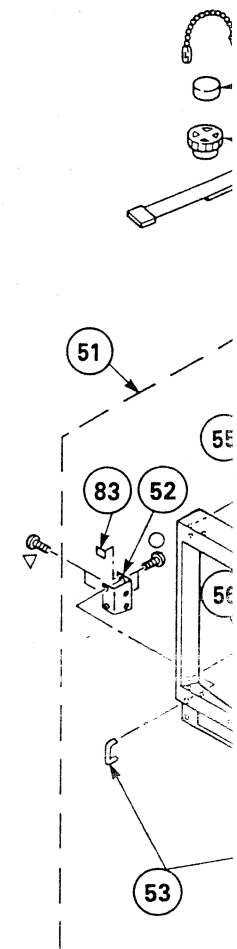
The components identified by shading and mark ▲ are critical for safety.  
Replace only with part number specified.



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-043-825-01	HANDLE		11	*4-044-053-01	SHEET, AC COVER	
2	4-043-675-11	COVER, TOP		12	1-537-735-11	TERMINAL BOARD ASSY, I/O (A)	
3	4-391-825-01	RIVET, NYLON		13	4-043-688-01	PANEL, CONNECTOR	
4	4-847-802-11	SCREW (OS), CASE, CLAW		14	*4-043-678-01	TERMINAL, GROUND	
5	*4-043-690-01	BRACKET, MAIN		15	4-043-677-01	COVER, REAR	
6	*A-1297-197-A	A BOARD, COMPLETE		16	4-386-618-01	RIVET, T TYPE	
7	▲ 1-453-164-11	TRANSFORMER ASSY, FLYBACK		17	*4-044-256-01	SHEET METAL, G REINFORCEMENT	
8	▲ 1-576-231-11	FUSE (H.B.C.) (4.0A/250V)					
9	*A-1316-175-A	G BOARD, COMPLETE					
10	*4-043-689-01	BRACKET, G					

## 7-2. PICTURE TU

- : + BVTP3 × 1  
■ : + BVTP4 × 1  
○ : + B4 × 12  
▽ : + BVTT4 × 1



## REF.NO. PART NO.

51	X-4031-758-
52	*4-043-669-0
53	4-043-680-0
54	*4-043-670-0
55	*4-043-673-0
56	*4-043-672-0
57	*A-1390-390-
58	*4-043-671-0
59	1-544-252-1
60	*A-1371-971-
61	X-4030-162-
62	4-043-681-0
63	4-043-683-0
64	▲ 1-692-921-1
65	*A-1388-166-
66	*X-4031-740-
67	*4-043-674-0
68	4-901-947-0
69	▲ 8-736-122-0
70	*3-704-372-0

# SECTION 7 EXPLODED VIEWS

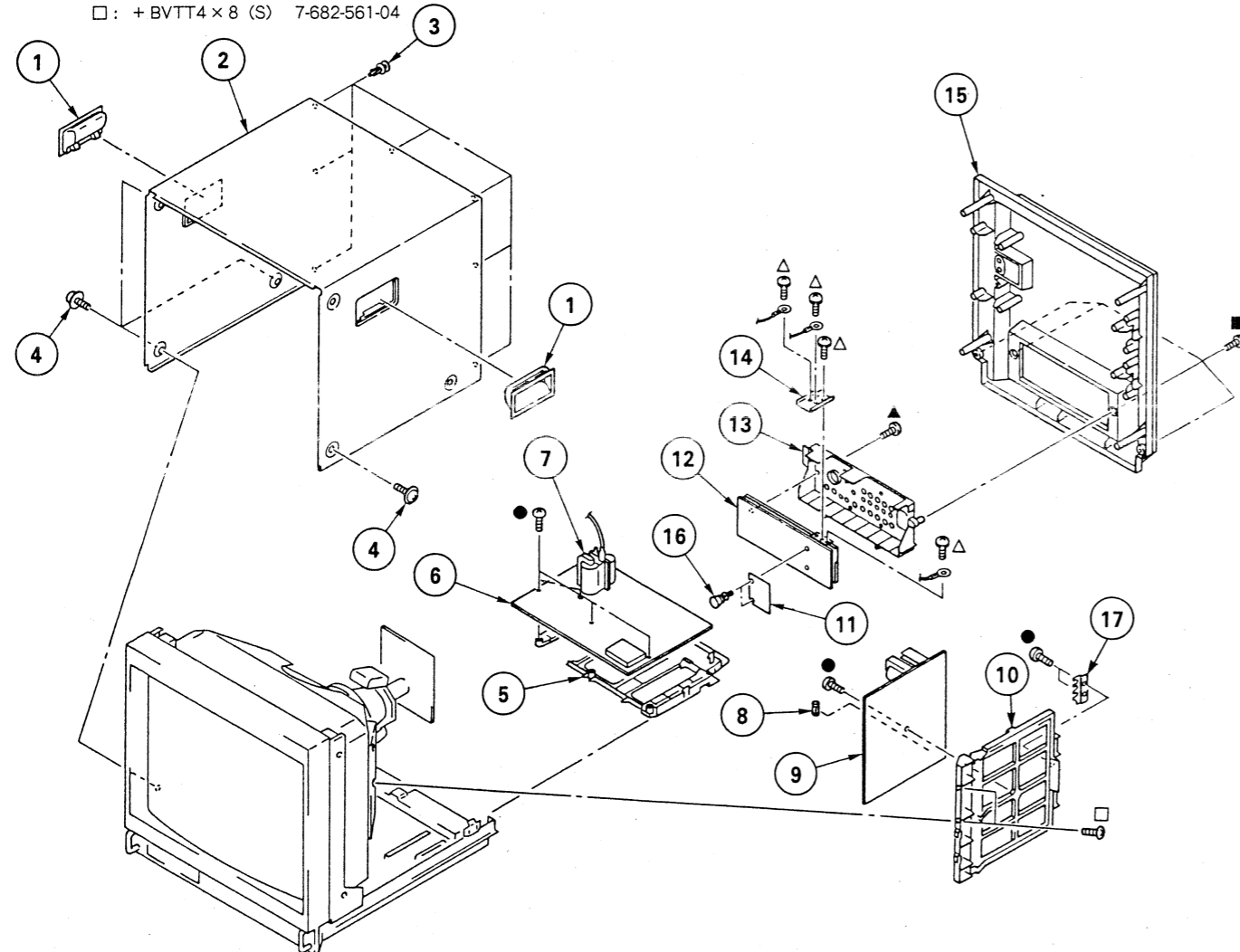
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

## 7-1. CHASSIS

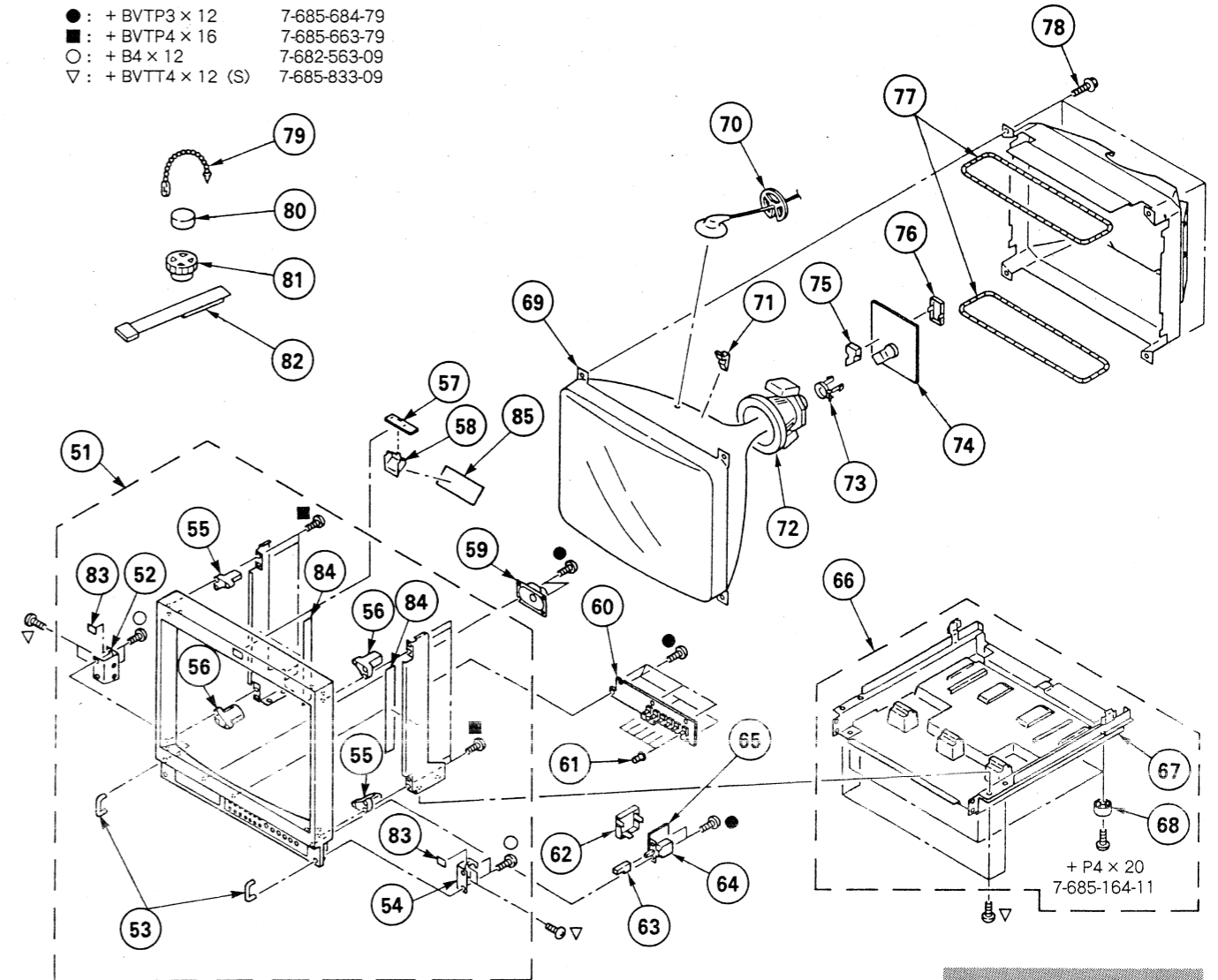
- $\Delta$ : + BVTP3  $\times$  8 7-685-646-79
- $\bullet$ : + BVTP3  $\times$  12 7-685-648-79
- $\blacksquare$ : + BVTP4  $\times$  16 7-685-663-79
- $\triangle$ : + PS4  $\times$  8 7-682-661-09
- $\square$ : + BVTT4  $\times$  8 (S) 7-682-561-04



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-043-825-01	HANDLE		11	*4-044-053-01	SHEET, AC COVER	
2	4-043-675-11	COVER, TOP		12	1-537-735-11	TERMINAL BOARD ASSY, I/O (A)	
3	4-391-825-01	RIVET, NYLON		13	4-043-688-01	PANEL, CONNECTOR	
4	4-847-802-11	SCREW (OS), CASE, CLAW		14	*4-043-678-01	TERMINAL, GROUND	
5	*4-043-690-01	BRACKET, MAIN		15	4-043-677-01	COVER, REAR	
6	*A-1297-197-A	A BOARD, COMPLETE		16	4-386-618-01	RIVET, T TYPE	
7	$\Delta$ 1-453-164-11	TRANSFORMER ASSY, FLYBACK		17	*4-044-256-01	SHEET METAL, G REINFORCEMENT	
8	$\Delta$ 1-576-231-11	FUSE (H.B.C.) (4.0A/250V)					
9	*A-1316-175-A	G BOARD, COMPLETE					
10	*4-043-689-01	BRACKET, G					

## 7-2. PICTURE TUBE

- $\bullet$ : + BVTP3  $\times$  12 7-685-684-79
- $\blacksquare$ : + BVTP4  $\times$  16 7-685-663-79
- $\circ$ : + B4  $\times$  12 7-682-563-09
- $\nabla$ : + BVTT4  $\times$  12 (S) 7-685-833-09



The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4031-758-1	BEZEL ASSY	52-56, 83, 84	71	3-703-961-01	SPACER, DY	
52	*4-043-669-01	REINFORCEMENT (L), HANDLE		72	$\Delta$ 1-451-349-11	DEFLECTION YOKE (Y20FZA)	
53	4-043-680-01	HANDLE, PROTECTOR		73	*4-382-050-01	BAND, C PC BOARD	
54	*4-043-670-01	REINFORCEMENT (R), HANDLE		74	*A-1331-300-A	C BOARD, COMPLETE	
55	*4-043-673-01	BRACKET (B), PICTURE TUBE		75	*4-379-167-01	COVER (MAIN), CV	
56	*4-043-672-01	BRACKET (A), PICTURE TUBE		76	*4-379-160-01	COVER (REAR LID), CV	
57	*A-1390-390-A	X BOARD, COMPLETE		77	$\Delta$ 1-426-505-11	COIL, DEMAGNETIZATION	
58	*4-043-671-01	REFLECTOR, LED		78	4-365-808-01	SCREW (5), TAPPING	
59	1-544-252-11	SPEAKER		79	4-308-870-00	CLIP, LEAD WIRE	
60	*A-1371-971-A	H BOARD, COMPLETE		80	1-452-032-00	MAGNET, DISK; 10MM $\phi$	
61	X-4030-162-2	KNOB ASSY, CONTROL		81	1-452-094-00	MAGNET, ROTABLE DISK; 15MM $\phi$	
62	4-043-681-01	COVER, AC SWITCH		82	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	
63	4-043-683-01	BUTTON, POWER SWITCH		83	*4-043-797-01	PLATE, BLIND	
64	$\Delta$ 1-692-921-11	SWITCH, PUSH (A.C. POWER)		84	4-391-833-01	CLOTH, PROTECTION	
65	*A-1388-166-A	J BOARD, COMPLETE		85	4-044-606-01	CUSHION, TALLY	
66	*X-4031-740-1	CABINET ASSY, BOTTOM	67, 68				
67	*4-043-674-01	CABINET, BOTTOM					
68	4-901-947-01	LEG					
69	$\Delta$ 8-736-122-05	PICTURE TUBE (M49KGH21X)					
70	*3-704-372-01	HOLDER, HV CABLE					

# SECTION 8 ELECTRICAL PARTS LIST

PVM-2054QM

A

## NOTE:

The components identified by shading and mark **Δ** are critical for safety.  
Replace only with part number specified.

• Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

## RESISTORS

• All resistors are in ohms  
• F : nonflammable

When indicating parts by reference number, please include the board name.

## CAPACITORS

• MF :  $\mu$ F, PF :  $\mu$ F

## COILS

• MMH : mH, UH :  $\mu$ H

• The components identified by **Δ** in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

• \* : Selected to yield optimum performance.

• There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1297-197-A	A BOARD, COMPLETE *****		C169	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
	1-540-044-11	SOCKET, IC		C171	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
	*4-030-359-01	HEAT SINK, H. PIN		C174	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
	*4-043-154-01	HOLDER, IC		C200	1-124-927-11	ELECT 4.7MF	20% 50V
	*4-043-994-01	PLATE (CF), SHIELD		C201	1-106-383-00	MYLAR 0.047MF	10% 100V
	4-363-414-00	SPACER, MICA		C202	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
	4-382-854-11	SCREW (M3X10), 'P, SW (+)		C203	1-124-927-11	ELECT 4.7MF	20% 50V
		<BAND PASS FILTER>		C204	1-124-907-11	ELECT 10MF	20% 50V
	BPF400 1-236-363-11	FILTER, BAND PASS		C205	1-124-360-00	ELECT 1000MF	20% 16V
		<CAPACITOR>		C206	1-126-375-11	ELECT 100MF	20% 25V
C105	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C207	1-124-478-11	ELECT 100MF	20% 25V
C106	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C208	1-124-907-11	ELECT 10MF	20% 50V
C114	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V	C209	1-124-927-11	ELECT 4.7MF	20% 50V
C115	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V	C300	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
C116	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V	C304	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C117	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V	C305	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C118	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	C306	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
C119	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C309	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
C121	1-163-237-11	CERAMIC CHIP 27PF	5% 50V	C310	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C123	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C311	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C124	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C312	1-124-925-11	ELECT 2.2MF	20% 50V
C132	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C313	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C133	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C314	1-163-249-11	CERAMIC CHIP 82PF	5% 50V
C134	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C315	1-124-907-11	ELECT 10MF	20% 50V
C135	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C316	1-124-477-11	ELECT 47MF	20% 25V
C136	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	C317	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C140	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C318	1-124-907-11	ELECT 10MF	20% 50V
C141	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C319	1-163-222-11	CERAMIC CHIP 5PF	0.25PF 50V
C142	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	C320	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
C143	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C322	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
C144	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C323	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C145	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C324	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C154	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C325	1-124-907-11	ELECT 10MF	20% 50V
C155	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V	C326	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C156	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	C327	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C157	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V	C328	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
C158	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C329	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C159	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C330	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C161	1-124-477-11	ELECT 47MF	20% 16V	C331	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C162	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C332	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C164	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C333	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
C165	1-163-319-11	CERAMIC CHIP 0.1MF	5% 50V	C334	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C166	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C335	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C167	1-124-472-11	ELECT 470MF	20% 10V	C336	1-124-477-11	ELECT 47MF	20% 25V
C168	1-124-472-11	ELECT 470MF	20% 10V	C337	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
				C338	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
				C339	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
				C340	1-163-031-11	CERAMIC CHIP 0.01MF	5% 50V
				C341	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
				C342	1-163-018-00	CERAMIC CHIP 0.0056MF	10% 50V
				C343	1-163-031-11	CERAMIC CHIP 0.01MF	50V

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C344	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C410	1-124-916-11	ELECT 22MF 20% 50V
C345	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C411	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V
C346	1-124-903-11	ELECT 1MF	20%	50V	C414	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C347	1-163-243-11	CERAMIC CHIP 47PF	5%	50V	C415	1-124-907-11	ELECT 10MF 20% 50V
C348	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	C416	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V
C349	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C417	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V
C350	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C418	1-164-182-11	CERAMIC CHIP 0.0033MF 10% 50V
C351	1-124-477-11	ELECT 47MF	20%	25V	C419	1-124-472-11	ELECT 470MF 20% 10V
C352	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C420	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C353	1-165-319-11	CERAMIC CHIP 0.1MF		50V	C421	1-164-222-11	CERAMIC CHIP 0.22MF 25V
C354	1-163-121-00	CERAMIC CHIP 150PF	5%	50V	C422	1-124-903-11	ELECT 1MF 20% 50V
C355	1-124-903-11	ELECT 1MF	20%	50V	C423	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C356	1-124-927-11	ELECT 4.7MF	20%	50V	C424	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C357	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C425	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C358	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C426	1-163-243-11	CERAMIC CHIP 47PF 5% 50V
C359	1-124-477-11	ELECT 47MF	20%	25V	C427	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C360	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C428	1-124-119-00	ELECT 330MF 20% 16V
C361	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C429	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C362	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C430	1-124-119-00	ELECT 330MF 20% 16V
C363	1-163-099-00	CERAMIC CHIP 18PF	5%	50V	C431	1-165-319-11	CERAMIC CHIP 0.1MF 50V
C364	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C432	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V
C365	1-106-343-00	MYLAR 0.001MF	10%	100V	C433	1-163-235-11	CERAMIC CHIP 22PF 5% 50V
C366	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C434	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C367	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C435	1-163-089-00	CERAMIC CHIP 6PF 0.25PF 50V
C368	1-124-907-11	ELECT 10MF	20%	50V	C436	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V
C369	1-164-298-11	CERAMIC CHIP 0.15MF	10%	25V	C437	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V
C370	1-124-477-11	ELECT 47MF	20%	25V	C438	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C371	1-124-477-11	ELECT 47MF	20%	25V	C439	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C372	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C440	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C373	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C441	1-126-962-11	ELECT 3.3MF 20% 50V
C374	1-124-903-11	ELECT 1MF	20%	50V	C442	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C375	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	C443	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C376	1-124-902-00	ELECT 0.47MF	20%	50V	C444	1-165-319-11	CERAMIC CHIP 0.1MF 50V
C377	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V	C445	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C378	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V	C446	1-163-229-11	CERAMIC CHIP 12PF 5% 50V
C379	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C447	1-163-263-11	CERAMIC CHIP 330PF 5% 50V
C380	1-124-472-11	ELECT 470MF	20%	10V	C448	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C381	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C449	1-163-227-11	CERAMIC CHIP 10PF 0.5PF 50V
C382	1-163-243-11	CERAMIC CHIP 47PF	5%	50V	C450	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V
C383	1-124-477-11	ELECT 47MF	20%	25V	C451	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V
C384	1-163-249-11	CERAMIC CHIP 82PF	5%	50V	C452	1-163-263-11	CERAMIC CHIP 330PF 5% 50V
C385	1-124-477-11	ELECT 47MF	20%	25V	C453	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C386	1-124-907-11	ELECT 10MF	20%	50V	C454	1-163-107-00	CERAMIC CHIP 39PF 5% 50V
C387	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C455	1-163-263-11	CERAMIC CHIP 330PF 5% 50V
C388	1-124-907-11	ELECT 10MF	20%	50V	C456	1-163-229-11	CERAMIC CHIP 12PF 5% 50V
C389	1-124-477-11	ELECT 47MF	20%	25V	C457	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C390	1-163-243-11	CERAMIC CHIP 47PF	5%	50V	C458	1-163-249-11	CERAMIC CHIP 82PF 5% 50V
C391	1-124-477-11	ELECT 47MF	20%	25V	C459	1-165-319-11	CERAMIC CHIP 0.1MF 50V
C392	1-164-298-11	CERAMIC CHIP 0.15MF	10%	25V	C460	1-164-004-11	CERAMIC CHIP 0.1MF 10% 25V
C393	1-164-298-11	CERAMIC CHIP 0.15MF	10%	25V	C461	1-163-119-00	CERAMIC CHIP 120PF 5% 50V
C394	1-124-477-11	ELECT 47MF	20%	25V	C462	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C395	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	C463	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C396	1-164-299-11	CERAMIC CHIP 0.22MF	10%	25V	C464	1-164-299-11	CERAMIC CHIP 0.22MF 10% 25V
C397	1-124-477-11	ELECT 47MF	20%	25V	C465	1-163-097-00	CERAMIC CHIP 15PF 5% 50V
C398	1-124-477-11	ELECT 47MF	20%	25V	C466	1-163-119-00	CERAMIC CHIP 120PF 5% 50V
C399	1-124-477-11	ELECT 47MF	20%	25V	C467	1-163-119-00	CERAMIC CHIP 120PF 5% 50V
C400	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	C469	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V
C401	1-164-346-11	CERAMIC CHIP 1MF		16V	C470	1-163-243-11	CERAMIC CHIP 47PF 5% 50V
C402	1-124-910-11	ELECT 47MF	20%	50V	C471	1-163-105-00	CERAMIC CHIP 33PF 5% 50V
C403	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C472	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C406	1-124-916-11	ELECT 22MF	20%	50V	C473	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C407	1-124-477-11	ELECT 47MF	20%	25V	C475	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C408	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	C476	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C409	1-163-031-11	CERAMIC CHIP 0.01MF		50V			

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C477	1-164-299-11	CERAMIC CHIP 0.22MF	10%	25V	C549	1-124-667-11	ELECT 10MF 20% 50V
C478	1-124-907-11	ELECT 10MF	20%	50V	C550	1-126-163-11	ELECT 4.7MF 20% 50V
C479	1-163-121-00	CERAMIC CHIP 150PF	5%	50V	C551	1-106-375-12	MYLAR 0.022MF 10% 100V
C482	1-124-472-11	ELECT 470MF	20%	10V	C552	1-126-336-11	ELECT 220MF 20% 25V
C483	1-163-249-11	CERAMIC CHIP 82PF	5%	50V	C553	1-106-389-00	MYLAR 0.082MF 10% 200V
C484	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	C554	1-130-736-11	FILM 0.01MF 5% 50V
C485	1-163-113-00	CERAMIC CHIP 68PF	5%	50V	C555	1-124-907-11	ELECT 10MF 20% 50V
C486	1-163-249-11	CERAMIC CHIP 82PF	5%	50V	C556	1-124-907-11	ELECT 10MF 20% 50V
C487	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	C557	1-106-381-12	MYLAR 0.039MF 10% 100V
C488	1-163-097-00	CERAMIC CHIP 15PF	5%	50V	C558	1-124-903-11	ELECT 1MF 20% 50V
C490	1-164-336-11	CERAMIC CHIP 0.33MF		25V	C559	1-136-173-00	FILM 0.47MF 5% 50V
C491	1-164-336-11	CERAMIC CHIP 0.33MF		25V	C561	1-136-159-00	FILM 0.033MF 5% 50V
C492	1-164-336-11	CERAMIC CHIP 0.33MF		25V	C562	1-163-249-11	CERAMIC CHIP 82PF 5% 50V
C493	1-104-760-11	CERAMIC CHIP 0.047MF	10%	50V	C564	1-124-907-11	ELECT 10MF 20% 50V
C494	1-104-760-11	CERAMIC CHIP 0.047MF	10%	50V	C565	1-124-903-11	ELECT 1MF 20% 50V
C495	1-124-907-11	ELECT 10MF	20%	50V	C566	1-106-367-00	MYLAR 0.01MF 10% 100V
C496	1-163-249-11	CERAMIC CHIP 82PF	5%	50V	C567	1-136-499-11	FILM 0.047MF 5% 50V
C497	1-163-011-11	CERAMIC CHIP 0.0015MF	10%	50V	C568	1-124-903-11	ELECT 1MF 20% 50V
C498	1-124-925-11	ELECT 2.2MF	20%	50V	C569	1-131-350-00	TANTALUM 3.3MF 10% 25V
C499	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C570	1-124-360-00	ELECT 1000MF 20% 16V
C500	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	C571	1-164-232-11	CERAMIC CHIP 0.01MF 10% 50V
C501	1-164-182-11	CERAMIC CHIP 0.0033MF	10%	50V	C572	1-104-709-11	ELECT 4.7MF 0 160V
C502	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	C573	1-136-177-00	FILM 1MF 5% 50V
C503	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C574	1-249-383-11	CARBON 1.5 5% 1/4W F
C504	1-136-175-00	FILM 0.068MF	5%	50V	C575	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C505	1-163-135-00	CERAMIC CHIP 560PF	5%	50V	C576	1-102-244-00	CERAMIC 220PF 10% 500V
C506	1-124-902-00	ELECT 0.47MF	20%	50V	C577	1-124-907-11	ELECT 10MF 20% 50V
C507	1-126-375-11	ELECT 100MF	20%	25V	C578	1-136-111-00	FILM 1MF 5% 200V
C508	1-130-495-00	MYLAR 0.1MF	5%	50V	C579	1-126-804-11	ELECT 100MF 20% 50V
C509	1-124-935-11	ELECT 470MF	20%	100V	C580	1-136-105-00	FILM 0.33MF 5% 200V
C511	1-108-700-11	MYLAR 0.047MF	10%	200V	C581	1-124-927-11	ELECT 4.7MF 20% 50V
C512	1-124-902-00	ELECT 0.47MF	20%	50V	C582	1-102-002-00	CERAMIC 680PF 10% 500V
C513	1-126-096-11	ELECT 10MF	20%	25V	C583	1-136-541-11	FILM 1.5MF 5% 200V
C514	Δ 1-129-718-00	FILM 0.022MF	10%	630V	C584	1-123-267-00	ELECT 2.2MF 20% 160V
C515	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V	C585	1-124-666-11	ELECT 4.7MF 20% 250V
C516	1-102-030-00	CERAMIC 330PF	10%	500V	C586	1-124-557-11	ELECT 1000MF 20% 25V
C517	1-163-024-00	CERAMIC CHIP 0.018MF	10%	50V	C587	1-102-030-00	CERAMIC 330PF 10% 500V
C518	1-107-995-11	ELECT 100MF	0	160V	C588	1-124-667-11	ELECT 10MF 20% 50V
C519	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	C589	1-102-030-00	CERAMIC 330PF 10% 500V
C520	1-163-257-11	CERAMIC CHIP 180PF	5%	50V	C590	1-126-387-11	ELECT 2.2MF 20% 50V
C521	1-162-114-00	CERAMIC 0.0047MF		2KV	C591	1-106-371-00	MYLAR 0.015MF 10% 200V
C522	1-126-375-11	ELECT 100MF	20%	25V	C592	1-123-932-00	ELECT 4.7MF 20% 160V
C523	1-126-801-11	ELECT 1MF	20%	50V	C593	1-165-319-11	CERAMIC CHIP 0.1MF 50V
C525	Δ 1-136-904-11	FILM 0.0115MF	3%	2KV	C594	1-163-229-11	CERAMIC CHIP 12PF 5% 50V
C526	Δ 1-162-116-91	CERAMIC 680PF	10%	2KV	C595	1-126-336-11	ELECT 220MF 20% 25V
C527	1-162-133-00	CERAMIC 390PF	10%	2KV	C596	1-124-478-11	ELECT 100MF 20% 25V
C529	1-104-797-11	ELECT 0.47MF	20%	50V	C597	1-164-346-11	CERAMIC CHIP 1MF 16V
C530	1-124-120-11	ELECT 220MF	20%	25V	C598	1-164-346-11	CERAMIC CHIP 1MF 16V
C531	1-124-477-11	ELECT 47MF	20%	25V	C599	1-126-157-11	ELECT 10MF 20% 16V
C532	1-163-031-11	CERAMIC CHIP 0.01MF		50V	C1300	1-124-477-11	ELECT 47MF 20% 25V
C533	1-102-212-00	CERAMIC 820PF	10%	500V	C1301	1-124-477-11	ELECT 47MF 20% 25V
C534	1-123-948-00	ELECT 22MF	20%	250V	C1302	1-163-131-00	CERAMIC CHIP 390PF 5% 50V
C537	1-124-913-11	ELECT 470MF	20%	50V	C1304	1-124-477-11	ELECT 47MF 20% 25V
C538	1-106-367-00	MYLAR 0.01MF	10%	100V	C1305	1-124-477-11	ELECT 47MF 20% 25V
C539	1-130-480-00	FILM 0.0056MF	5%	50V	C1306	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C540	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	C1307	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C541	1-124-927-11	ELECT 4.7MF	20%	50V	C1308	1-124-443-00	ELECT 100MF 20% 10V
C542	1-106-351-00	MYLAR 0.0022MF	10%	100V	C1309	1-163-257-11	CERAMIC CHIP 180PF 5% 50V
C543	1-106-351-00	MYLAR 0.0022MF	10%	100V	C1310	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C544	1-106-367-00	MYLAR 0.01MF	10%	100V	C1311	1-124-477-11	ELECT 47MF 20% 25V
C545	1-102-212-00	CERAMIC 820PF	10%	500V	C1312	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C546	1-163-119-00	CERAMIC CHIP 120PF	5%	50V	C1313	1-163-031-11	CERAMIC CHIP 0.01MF 50V
C547	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	C1314	1-124-477-11	ELECT 47MF 20% 25V
C548	1-102-212-00	CERAMIC 820PF	10%	500V			

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REF.NO.	PART NO.	DESCRIPTION	REMARK
C1315	1-124-477-11	ELECT 47MF	20% 25V
C1316	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1317	1-124-477-11	ELECT 47MF	20% 25V
C1318	1-124-477-11	ELECT 47MF	20% 25V
C1319	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C1320	1-124-477-11	ELECT 47MF	20% 25V
C1321	1-124-477-11	ELECT 47MF	20% 25V
C1322	1-124-120-11	ELECT 220MF	20% 16V
C1323	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1324	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1325	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1326	1-124-477-11	ELECT 47MF	20% 25V
C1327	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1328	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1329	1-124-907-11	ELECT 10MF	20% 50V
C1330	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1331	1-124-477-11	ELECT 47MF	20% 25V
C1332	1-124-477-11	ELECT 47MF	20% 25V
C1333	1-124-477-11	ELECT 47MF	20% 25V
C1334	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
C1335	1-124-477-11	ELECT 47MF	20% 25V
C1336	1-124-477-11	ELECT 47MF	20% 25V
C1338	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1339	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1340	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1341	1-163-275-11	CERAMIC CHIP 0.001MF	5% 50V
C1342	1-102-963-00	CERAMIC 33PF	5% 50V
C1343	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C1344	1-163-083-00	CERAMIC CHIP 1PF	0.25PF 50V
C1345	1-124-907-11	ELECT 10MF	20% 50V
C1346	1-124-477-11	ELECT 47MF	20% 25V
C1347	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1348	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
C1349	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C1350	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C1351	1-124-903-11	ELECT 1MF	20% 50V
C1352	1-163-023-00	CERAMIC CHIP 0.015MF	10% 50V
C1353	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1354	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C1355	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C1356	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1357	1-124-119-00	ELECT 330MF	20% 16V
C1358	1-124-477-11	ELECT 47MF	20% 25V
C1359	1-163-263-11	CERAMIC CHIP 330PF	5% 50V
C1360	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C1362	1-163-249-11	CERAMIC CHIP 82PF	5% 50V
C1363	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1364	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C1365	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
C1366	1-124-477-11	ELECT 47MF	20% 25V
C1367	1-124-477-11	ELECT 47MF	20% 25V
C1369	1-163-237-11	CERAMIC CHIP 27PF	5% 50V
C1370	1-163-237-11	CERAMIC CHIP 27PF	5% 50V
C1372	1-124-477-11	ELECT 47MF	20% 25V
C1373	1-124-477-11	ELECT 47MF	20% 25V
C1374	1-124-477-11	ELECT 47MF	20% 25V
C1375	1-124-927-11	ELECT 4.7MF	20% 50V
C1378	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C1380	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C1381	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C1382	1-124-443-00	ELECT 100MF	20% 10V
C1383	1-124-477-11	ELECT 47MF	20% 25V
C1384	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C1385	1-163-031-11	CERAMIC CHIP 0.01MF	50V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C1386	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1387	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1393	1-163-251-11	CERAMIC CHIP 100PF	5% 50V
C1400	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1401	1-136-173-00	FILM 0.47MF	5% 50V
C1402	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C1403	1-136-173-00	FILM 0.47MF	5% 50V
C1404	1-164-299-11	CERAMIC CHIP 0.22MF	10% 25V
C1405	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C1406	1-163-090-00	CERAMIC CHIP 7PF	0.25PF 50V
C1407	1-163-085-00	CERAMIC CHIP 2PF	0.25PF 50V
C1408	1-163-107-00	CERAMIC CHIP 39PF	5% 50V
C1500	1-124-473-11	ELECT 1000MF	20% 10V
C1501	1-124-472-11	ELECT 470MF	20% 10V
C1502	1-101-821-00	CERAMIC 0.0022MF	500V
C1503	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C1504	1-124-907-11	ELECT 10MF	20% 50V
C1505	1-136-165-00	FILM 0.1MF	5% 50V
C1506	1-124-119-00	ELECT 330MF	20% 16V
C1507	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C1508	1-124-927-11	ELECT 4.7MF	20% 50V
C1509	1-124-907-11	ELECT 10MF	20% 50V
C1510	1-124-927-11	ELECT 4.7MF	20% 50V
C1511	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C1512	1-124-927-11	ELECT 4.7MF	20% 50V
C1513	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C1514	1-130-477-00	MYLAR 0.0033MF	5% 50V
C1515	1-124-907-11	ELECT 10MF	20% 50V
C1516	1-163-063-00	CERAMIC CHIP 0.022MF	10% 50V
C1517	1-126-101-11	ELECT 100MF	20% 10V
C1518	1-124-477-11	ELECT 47MF	20% 16V
C1519	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C1520	1-162-129-00	CERAMIC 150PF	10% 2KV
C1521	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
<CONNECTOR>			
CN101	*1-573-979-11	CONNECTOR, BOARD TO BOARD 11P	
CN102	*1-564-514-11	PLUG, CONNECTOR 11P	
CN104	*1-564-506-11	PLUG, CONNECTOR 3P	
CN105	*1-565-503-11	CONNECTOR, BOARD TO BOARD 12P	
CN201	*1-564-506-11	PLUG, CONNECTOR 3P	
CN301	*1-564-514-11	PLUG, CONNECTOR 11P	
CN302	*1-564-510-11	PLUG, CONNECTOR 7P	
CN303	*1-564-515-11	PLUG, CONNECTOR 12P	
CN304	*1-564-509-11	PLUG, CONNECTOR 6P	
CN305	*1-565-504-11	CONNECTOR, BOARD TO BOARD 13P	
CN401	*1-564-511-11	PLUG, CONNECTOR 8P	
CN402	*1-564-515-11	PLUG, CONNECTOR 12P	
CN501	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN502	*1-573-964-11	PIN, CONNECTOR (PC BOARD) 6P	
CN503	*1-573-964-11	PIN, CONNECTOR (PC BOARD) 6P	
CN504	*1-564-508-11	PLUG, CONNECTOR 5P	
CN505	*1-564-506-11	PLUG, CONNECTOR 3P	
CN506	1-249-383-11	CARBON 1.5	5% 1/4W F
CN507	*1-535-419-00	TAB, FASTEN (PCB)	
<COMPOSITION CIRCUIT BLOCK>			
CP300	1-236-366-11	MODULE, TRAP	
CP301	1-236-365-11	MODULE, TRAP	
CP302	1-808-654-21	MODULE	
CP303	1-466-162-61	FILTER BLOCK, COM (CFB-4)	

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
<DIODE>				D355	8-719-800-76	DIODE 1SS226	
D101	8-719-800-76	DIODE 1SS226		D360	8-719-104-34	DIODE 1S2836	
D102	8-719-800-76	DIODE 1SS226		D361	8-719-104-34	DIODE 1S2836	
D103	8-719-045-70	DIODE 1SV230TPH3		D362	8-719-158-40	DIODE RD10SB1	
D104	8-719-800-76	DIODE 1SS226		D363	8-719-158-40	DIODE RD10SB1	
D105	8-719-800-76	DIODE 1SS226		D364	8-719-104-34	DIODE 1S2836	
D106	8-719-901-33	DIODE 1SS133		D365	8-719-404-46	DIODE MA110	
D107	8-719-800-76	DIODE 1SS226		D381	8-719-404-46	DIODE MA110	
D108	8-719-901-33	DIODE 1SS133		D401	8-719-404-46	DIODE MA110	
D109	8-719-801-78	DIODE 1SS184		D404	8-719-800-76	DIODE 1SS226	
D110	8-719-404-46	DIODE MA110		D405	8-719-801-78	DIODE 1SS184	
D111	8-719-977-05	DIODE DTZ6.2		D406	8-719-404-46	DIODE MA110	
D112	8-719-404-46	DIODE MA110		D407	8-719-404-46	DIODE MA110	
D113	8-719-159-06	DIODE RD4.7SB-T2		D408	8-719-404-46	DIODE MA110	
D114	8-719-404-46	DIODE MA110		D410	8-719-404-46	DIODE MA110	
D115	8-719-977-05	DIODE DTZ6.2		D411	8-719-404-46	DIODE MA110	
D116	8-719-404-46	DIODE MA110		D414	8-719-801-78	DIODE 1SS184	
D200	8-719-977-46	DIODE DTZ13C		D415	8-719-801-78	DIODE 1SS184	
D300	8-719-025-07	DIODE 1SV232-TPH3		D416	8-719-801-78	DIODE 1SS184	
D301	8-719-404-46	DIODE MA110		D417	8-719-801-78	DIODE 1SS184	
D302	8-719-159-06	DIODE RD4.7SB-T2		D418	8-719-801-78	DIODE 1SS184	
D303	8-719-977-05	DIODE DTZ6.2		D421	8-719-404-46	DIODE MA110	
D304	8-719-801-78	DIODE 1SS184		D422	8-719-404-46	DIODE MA110	
D305	8-719-800-76	DIODE 1SS226		D423	8-719-800-76	DIODE 1SS226	
D306	8-719-104-34	DIODE 1S2836		D424	8-719-404-46	DIODE MA110	
D307	8-719-404-46	DIODE MA110		D425	8-719-800-76	DIODE 1SS226	
D308	8-719-901-33	DIODE 1SS133		D426	8-719-159-06	DIODE RD4.7SB-T2	
D309	8-719-404-46	DIODE MA110		D427	8-719-404-46	DIODE MA110	
D310	8-719-104-34	DIODE 1S2836		D500	8-719-404-46	DIODE MA110	
D311	8-719-045-70	DIODE 1SV230TPH3		D501	8-719-977-03	DIODE DTZ5.6B	
D313	8-719-801-78	DIODE 1SS184		D502	8-719-979-80	DIODE UF5406	
D314	8-719-404-46	DIODE MA110		D503	8-719-404-46	DIODE MA110	
D315	8-719-404-46	DIODE MA110		D504	8-719-901-83	DIODE 1SS83	
D317	8-719-404-46	DIODE MA110		D505	8-719-028-72	DIODE RGP02-17EL-6433	
D318	8-719-800-76	DIODE 1SS226		D506	8-719-945-80	DIODE ERC06-15S	
D319	8-719-800-76	DIODE 1SS226		D507	8-719-800-76	DIODE 1SS226	
D320	8-719-404-46	DIODE MA110		D508	8-719-800-76	DIODE 1SS226	
D322	8-719-404-46	DIODE MA110		D509	8-719-404-46	DIODE MA110	
D323	8-719-404-46	DIODE MA110		D510	8-719-302-43	DIODE EL1Z	
D324	8-719-045-70	DIODE 1SV230TPH3		D512	8-719-979-80	DIODE UF5406	
D325	8-719-801-78	DIODE 1SS184		D513	8-719-404-46	DIODE MA110	
D326	8-719-045-70	DIODE 1SV230TPH3		D514	8-719-971-20	DIODE ERC38-06	
D327	8-719-104-34	DIODE 1S2836		D515	8-719-971-20	DIODE ERC38-06	
D332	8-719-404-46	DIODE MA110		D516	8-719-404-46	DIODE MA110	
D333	8-719-404-46	DIODE MA110		D517	8-719-404-46	DIODE MA110	
D335	8-719-404-46	DIODE MA110		D518	8-719-404-46	DIODE MA110	
D336	8-719-404-46	DIODE MA110		D519	8-719-404-46	DIODE MA110	
D337	8-719-404-46	DIODE MA110		D520	8-719-801-78	DIODE 1SS184	
D338	8-719-404-46	DIODE MA110		D521	8-719-901-33	DIODE 1SS133	
D339	8-719-404-46	DIODE MA110		D522	8-719-977-05	DIODE DTZ6.2	
D341	8-719-159-06	DIODE RD4.7SB-T2		D523	8-719-404-46	DIODE MA110	
D344	8-719-801-78	DIODE 1SS184		D524	8-719-200-02	DIODE 10E-2	
D345	8-719-104-34	DIODE 1S2836		D525	8-719-200-02	DIODE 10E-2	
D346	8-719-104-34	DIODE 1S2836		D526	8-719-404-46	DIODE MA110	
D347	8-719-104-34	DIODE 1S2836		D527	8-719-200-02	DIODE 10E-2	
D348	8-719-800-76	DIODE 1SS226		D528	8-719-300-76	DIODE RH-1A	
D349	8-719-800-76	DIODE 1SS226		D529	8-719-200-02	DIODE 10E-2	
D350	8-719-800-76	DIODE 1SS226		D530	8-719-300-76	DIODE RH-1A	
D351	8-719-800-76	DIODE 1SS226		D531	8-719-977-32	DIODE DTZ11B	
D352	8-719-800-76	DIODE 1SS226		D532	8-719-800-76	DIODE 1SS226	
D353	8-719-800-76	DIODE 1SS226		D533	8-719-302-43	DIODE EL1Z	
D354	8-719-800-76	DIODE 1SS226		D534	8-719-404-46	DIODE MA110	
				D535	8-719-404-46	DIODE MA110	
				D536	8-719-800-76	DIODE 1SS226	

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The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D537	8-719-800-76	DIODE ISS226		IC409	8-759-060-00	IC BA10324AF	
D538	8-719-800-76	DIODE ISS226		IC410	8-759-932-64	IC BU4052BCF	
D539	8-719-404-46	DIODE MA110		IC411	8-759-008-92	IC MC14024BF	
D540	8-719-404-46	DIODE MA110		IC412	8-759-509-19	IC XRU4053BCF-E2	
D541	8-719-801-78	DIODE ISS184		IC413	8-759-509-19	IC XRU4053BCF-E2	
D542	8-719-901-33	DIODE ISS133		IC500	8-749-010-08	IC H8D7249	
<DELAY LINE>				IC502	8-759-009-51	IC MC14538BF	
DL300	1-415-633-11	DELAY LINE, Y		IC503	8-759-009-51	IC MC14538BF	
DL301	1-415-632-11	DELAY LINE, Y		IC504	8-752-053-21	IC CXA1211M	
DL401	1-409-547-11	DELAY LINE		IC505	8-759-520-07	IC XRA17812T	
<FILTER>				IC506	8-759-009-51	IC MC14538BF	
FL300	1-236-547-11	TRAP, LC		IC507	8-759-100-60	IC UPC1377C	
FL401	1-236-364-11	FILTER, BAND PASS		IC508	8-752-053-21	IC CXA1211M	
<IC>				IC509	8-759-998-98	IC LM358D	
IC101	8-759-196-71	IC UPD78013YCW-Y03		IC510	8-759-009-51	IC MC14538BF	
IC102	8-759-168-37	IC ST24C01B1		<COIL>			
IC103	8-759-008-48	IC MC74HC86F		L101	1-408-609-41	INDUCTOR	33UH
IC104	8-759-262-59	IC UPD6451AGT-632-E2		L102	1-408-417-00	INDUCTOR	47UH
IC105	8-759-196-70	IC M62358FP-E1		L104	1-408-425-00	INDUCTOR	220UH
IC106	8-759-196-70	IC M62358FP-E1		L105	1-410-482-31	INDUCTOR	100UH
IC107	8-759-196-70	IC M62358FP-E1		L300	1-410-478-11	INDUCTOR	47UH
IC108	8-759-042-02	IC S-80743AL-A7-S		L301	1-408-411-00	INDUCTOR	15UH
IC109	8-759-196-70	IC M62358FP-E1		L302	1-412-008-31	INDUCTOR CHIP	15UH
IC110	8-759-196-70	IC M62358FP-E1		L303	1-408-416-00	INDUCTOR	39UH
IC111	8-759-009-22	IC MC14094BF		L304	1-412-008-31	INDUCTOR CHIP	15UH
IC200	8-759-420-04	IC AN5265		L305	1-410-196-11	INDUCTOR CHIP	2.2UH
IC301	8-752-053-21	IC CXA1211M		L306	1-408-416-00	INDUCTOR	39UH
IC302	8-759-998-98	IC LM358D		L307	1-408-411-00	INDUCTOR	15UH
IC303	8-752-056-67	IC CXA1214P		L308	1-410-466-41	INDUCTOR	4.7UH
IC304	8-759-509-19	IC XRU4053BCF-E2		L309	1-410-470-11	INDUCTOR	10UH
IC305	8-759-631-08	IC M51279FP		L311	1-410-470-11	INDUCTOR	10UH
IC306	8-759-711-32	IC NJM2245M		L312	1-412-011-31	INDUCTOR CHIP	27UH
IC309	8-759-711-32	IC NJM2245M		L314	1-412-011-31	INDUCTOR CHIP	27UH
IC310	8-759-509-19	IC XRU4053BCF-E2		L316	1-412-011-31	INDUCTOR CHIP	27UH
IC311	8-759-509-05	IC XRU4066BCF		L317	1-410-090-41	INDUCTOR	18MMH
IC312	8-759-711-32	IC NJM2245M		L319	1-408-421-00	INDUCTOR	100UH
IC313	8-759-501-21	IC MM1149XF		L320	1-410-478-11	INDUCTOR	47UH
IC314	8-759-501-21	IC MM1149XF		L401	1-410-478-11	INDUCTOR	47UH
IC315	8-759-509-19	IC XRU4053BCF-E2		L402	1-410-215-31	INDUCTOR CHIP	82UH
IC316	8-759-048-09	IC MM1148XF		L403	1-410-215-31	INDUCTOR CHIP	82UH
IC317	8-759-009-51	IC MC14538BF		L404	1-410-215-31	INDUCTOR CHIP	82UH
IC318	8-759-509-57	IC XRU4584BF		L405	1-408-419-00	INDUCTOR	68UH
IC320	8-759-501-21	IC MM1149XF		L406	1-408-419-00	INDUCTOR	68UH
IC321	8-759-501-21	IC MM1149XF		L407	1-408-413-00	INDUCTOR	22UH
IC322	8-759-501-21	IC MM1149XF		L408	1-408-413-00	INDUCTOR	22UH
IC323	8-759-501-21	IC MM1149XF		L409	1-410-215-31	INDUCTOR CHIP	82UH
IC324	8-759-501-21	IC MM1149XF		L500	1-459-155-00	COIL (WITH CORE) 45UH	
IC325	8-759-501-21	IC MM1149XF		L501	1-407-365-00	COIL, CHOKE	
IC326	8-759-060-00	IC BA10324AF		L502	1-407-365-00	COIL, CHOKE	
IC350	8-759-100-96	IC UPC4558G2		L503	1-410-093-11	INDUCTOR	33MMH
IC401	8-759-196-69	IC BA7655AF-E2		L504	1-410-666-31	INDUCTOR	18UH
IC402	8-752-053-21	IC CXA1211M		L505	1-410-671-31	INDUCTOR	47UH
IC403	8-759-509-05	IC XRU4066BCF		L506	1-459-104-00	COIL, DUST CORE	
IC404	8-752-052-62	IC CXA1478S		L507	1-410-686-11	INDUCTOR	1MMH
IC405	8-759-509-19	IC XRU4053BCF-E2		L508	1-412-530-31	INDUCTOR	27UH
IC406	8-759-998-98	IC LM358D		L509	1-459-087-00	COIL, HCC DUST CORE 3.9MMH	
IC407	8-759-509-05	IC XRU4066BCF		L510	$\Delta$ 1-459-106-00	COIL, DUST CORE	
IC408	8-759-509-91	IC XRA10393F		L512	$\Delta$ 1-459-232-00	COIL, CORE	
				L513	1-412-447-11	INDUCTOR	3.9MMH
				L514	1-459-104-00	COIL, DUST CORE	
				L515	1-459-059-00	COIL, DUST CORE	

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REF.NO. PART NO. DESCRIPTION

L517 1-412-547-21 INDUCTOR 680UH

&lt;NEON LAMP&gt;

NL500 1-519-526-11 LAMP, NEON

&lt;TRANSISTOR&gt;

Q101 8-729-901-01 TRANSISTOR DTC144EK  
 Q102 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q103 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q104 8-729-907-26 TRANSISTOR 1MX1  
 Q105 8-729-901-06 TRANSISTOR DTA144EK  
 Q107 8-729-901-06 TRANSISTOR DTA144EK  
 Q108 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q109 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q110 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q111 8-729-901-06 TRANSISTOR DTA144EK  
 Q112 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q113 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q114 8-729-119-78 TRANSISTOR 2SC2785-HFE  
 Q200 8-729-140-96 TRANSISTOR 2SD774-34  
 Q201 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q300 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q301 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q302 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q303 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q304 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q305 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q306 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q307 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q308 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q309 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q310 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q311 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q312 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q313 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q314 8-729-901-06 TRANSISTOR DTA144EK  
 Q315 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q316 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q318 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q319 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q320 8-729-119-78 TRANSISTOR 2SC2785-HFE  
 Q321 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q322 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q323 8-729-901-01 TRANSISTOR DTC144EK  
 Q324 8-729-901-01 TRANSISTOR DTC144EK  
 Q325 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q326 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q327 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q328 8-729-141-53 TRANSISTOR 2SK94-X2X3X4  
 Q329 8-729-141-53 TRANSISTOR 2SK94-X2X3X4  
 Q330 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q331 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q332 8-729-901-01 TRANSISTOR DTC144EK  
 Q333 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q334 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q335 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q336 8-729-109-44 TRANSISTOR 2SK94-X4  
 Q337 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q338 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q339 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q341 8-729-920-39 TRANSISTOR 1MT1US

REMARK

REF.NO. PART NO. DESCRIPTION

REMARK

Q342 8-729-920-39 TRANSISTOR 1MT1US  
 Q343 8-729-920-39 TRANSISTOR 1MT1US  
 Q345 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q346 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q347 8-729-901-01 TRANSISTOR DTC144EK  
 Q348 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q349 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q350 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q351 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q352 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q353 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q354 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q355 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q356 8-729-901-01 TRANSISTOR DTC144EK  
 Q357 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q358 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q359 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q360 8-729-907-26 TRANSISTOR 1MX1  
 Q361 8-729-901-06 TRANSISTOR DTA144EK  
 Q362 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q363 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q364 8-729-901-01 TRANSISTOR DTC144EK  
 Q365 8-729-901-01 TRANSISTOR DTC144EK  
 Q366 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q367 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q368 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q369 8-729-901-06 TRANSISTOR DTA144EK  
 Q372 8-729-901-01 TRANSISTOR DTC144EK  
 Q373 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q374 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q375 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q376 8-729-901-01 TRANSISTOR DTC144EK  
 Q377 8-729-901-06 TRANSISTOR DTA144EK  
 Q378 8-729-901-01 TRANSISTOR DTC144EK  
 Q401 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q402 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q403 8-729-901-01 TRANSISTOR DTC144EK  
 Q404 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q405 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q406 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q407 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q408 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q409 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q410 8-729-907-26 TRANSISTOR 1MX1  
 Q411 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q412 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q413 8-729-141-53 TRANSISTOR 2SK94-X2X3X4  
 Q414 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q415 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q416 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q417 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q418 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q419 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q420 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q421 8-729-901-01 TRANSISTOR DTC144EK  
 Q422 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q423 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q424 8-729-901-01 TRANSISTOR DTC144EK  
 Q425 8-729-901-01 TRANSISTOR DTC144EK  
 Q426 8-729-901-01 TRANSISTOR DTC144EK  
 Q428 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q429 8-729-216-22 TRANSISTOR 2SA1162-G  
 Q430 8-729-120-28 TRANSISTOR 2SC1623-L5L6  
 Q431 8-729-120-28 TRANSISTOR 2SC1623-L5L6

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REF. NO.	PART NO.	DESCRIPTION	REMARK
Q432	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q433	8-729-901-01	TRANSISTOR DTC144EK	
Q434	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q435	8-729-901-01	TRANSISTOR DTC144EK	
Q436	8-729-901-01	TRANSISTOR DTC144EK	
Q437	8-729-901-01	TRANSISTOR DTC144EK	
Q438	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q439	8-729-216-22	TRANSISTOR 2SA1162-G	
Q440	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q441	8-729-141-53	TRANSISTOR 2SK94-X2X3X4	
Q442	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q443	8-729-216-22	TRANSISTOR 2SA1162-G	
Q444	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q445	8-729-901-01	TRANSISTOR DTC144EK	
Q500	8-729-216-22	TRANSISTOR 2SA1162-G	
Q501	8-729-800-35	TRANSISTOR 2SD1397-CA	
Q502	8-729-119-80	TRANSISTOR 2SC2688-L	
Q503	8-729-313-42	TRANSISTOR 2SD1134-C	
Q505	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q506	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q507	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q508	8-729-216-22	TRANSISTOR 2SA1162-G	
Q509	8-729-901-06	TRANSISTOR DTA144EK	
Q510	8-729-900-89	TRANSISTOR DTC144ES	
Q511	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q512	8-729-195-82	TRANSISTOR 2SC2958-L	
Q513	8-729-122-03	TRANSISTOR 2SA1220A-P	
Q514	8-729-901-00	TRANSISTOR DTC124EK	
Q515	8-729-169-02	TRANSISTOR 2SC2690A-Q	
Q517	8-729-901-06	TRANSISTOR DTA144EK	
Q518	8-729-901-01	TRANSISTOR DTC144EK	
Q519	8-729-901-01	TRANSISTOR DTC144EK	
Q520	8-729-905-67	TRANSISTOR 2SD1944-K	
Q522	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q523	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q524	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q525	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q526	8-729-216-22	TRANSISTOR 2SA1162-G	
Q527	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
<RESISTOR>			
JR122	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR123	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR302	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R101	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R102	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R103	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R104	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R105	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R106	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R107	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R108	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R109	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R110	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R111	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R112	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R113	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R114	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R115	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R116	1-218-761-11	METAL CHIP 240K 0.50% 1/10W	
R117	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R118	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R119	1-216-689-11	METAL GLAZE 39K 5% 1/10W	

REF. NO.	PART NO.	DESCRIPTION	REMARK
R120	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R121	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R122	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R123	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R124	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R125	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R126	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R127	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R128	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R129	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R130	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R131	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R132	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R133	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R134	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R135	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R136	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R137	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R138	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R139	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R140	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R141	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R142	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R143	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R144	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R145	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R147	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R148	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R149	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R150	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R151	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R152	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R153	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R154	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R155	1-249-434-11	CARBON 27K 5% 1/4W	
R156	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R157	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R158	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R159	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R160	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R162	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R163	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R164	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R165	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R167	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R168	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R169	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R170	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R171	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R172	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R173	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R174	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R175	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R177	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R180	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R181	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R183	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R184	1-216-649-11	METAL CHIP 820 0.50% 1/10W	
R185	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R186	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R187	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R188	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R189	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

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REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R190	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R347	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R192	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R348	1-216-031-00	METAL GLAZE	180 5% 1/10W
R193	1-216-295-00	METAL GLAZE	0 5% 1/10W	R349	1-216-694-11	METAL CHIP	62K 0.50% 1/10W
R194	1-216-295-00	METAL GLAZE	0 5% 1/10W	R350	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R195	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R351	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R197	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R352	1-216-675-11	METAL CHIP	10K 0.50% 1/10W
R198	1-216-295-00	METAL GLAZE	0 5% 1/10W	R353	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R199	1-216-295-00	METAL GLAZE	0 5% 1/10W	R354	1-247-901-11	CARBON	820K 5% 1/4W
R200	1-216-686-11	METAL CHIP	30K 0.50% 1/10W	R355	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R201	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R356	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R202	1-212-857-00	FUSIBLE	10 5% 1/4W F	R357	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R203	1-260-095-11	CARBON	470 5% 1/2W	R358	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R204	1-260-072-11	CARBON	4.7 5% 1/2W	R359	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R205	1-216-647-11	METAL CHIP	680 0.50% 1/10W	R360	1-216-039-00	METAL GLAZE	390 5% 1/10W
R206	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R361	1-216-017-00	METAL GLAZE	47 5% 1/10W
R207	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R362	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R208	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R363	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R209	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R364	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R210	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R366	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R211	1-249-393-11	CARBON	10 5% 1/4W F	R367	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R237	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R368	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R301	1-216-025-00	METAL GLAZE	100 5% 1/10W	R371	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R302	1-216-025-00	METAL GLAZE	100 5% 1/10W	R372	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R303	1-216-025-00	METAL GLAZE	100 5% 1/10W	R373	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R304	1-216-025-00	METAL GLAZE	100 5% 1/10W	R374	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R305	1-216-295-00	METAL GLAZE	0 5% 1/10W	R375	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R306	1-216-295-00	METAL GLAZE	0 5% 1/10W	R376	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R307	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R378	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R308	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R379	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R311	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R380	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R312	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R381	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R313	1-216-649-11	METAL CHIP	820 0.50% 1/10W	R382	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R314	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R383	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R315	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R384	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R316	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R385	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R317	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R386	1-249-438-11	CARBON	56K 5% 1/4W
R318	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R387	1-216-029-00	METAL GLAZE	150 5% 1/10W
R319	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R388	1-216-033-00	METAL GLAZE	220 5% 1/10W
R320	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R389	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R321	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R390	1-249-393-11	CARBON	10 5% 1/4W F
R322	1-216-035-00	METAL GLAZE	270 5% 1/10W	R391	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R323	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R393	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R324	1-216-101-00	METAL GLAZE	150K 5% 1/10W	R394	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R325	1-216-037-00	METAL GLAZE	330 5% 1/10W	R395	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R326	1-216-033-00	METAL GLAZE	220 5% 1/10W	R396	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R328	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R397	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R329	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R398	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R330	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R399	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R331	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R401	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R332	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R402	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R333	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R403	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R334	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R404	1-216-029-00	METAL GLAZE	150 5% 1/10W
R335	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R405	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R336	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R406	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R337	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R407	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R338	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R408	1-216-689-11	METAL CHIP	39K 0.50% 1/10W
R339	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R410	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R340	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R411	1-216-033-00	METAL GLAZE	220 5% 1/10W
R341	1-216-673-11	METAL CHIP	8.2K 0.50% 1/10W	R412	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R342	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R413	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R343	1-216-095-00	METAL GLAZE	82K 5% 1/10W	R414	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R344	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R416	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R345	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R417	1-216-665-11	METAL CHIP	3.9K 0.50% 1/10W
R346	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W				

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REF. NO.	PART NO.	DESCRIPTION	REMARK
R418	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R420	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R422	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R423	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R424	1-216-033-00	METAL GLAZE	220 5% 1/10W
R425	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R426	1-216-039-00	METAL GLAZE	390 5% 1/10W
R427	1-216-033-00	METAL GLAZE	220 5% 1/10W
R428	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R429	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R430	1-216-119-00	METAL GLAZE	820K 5% 1/10W
R431	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R432	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R434	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R435	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R436	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R437	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R438	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R439	1-216-033-00	METAL GLAZE	220 5% 1/10W
R440	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R441	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R442	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R443	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R444	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R445	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R447	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R448	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R449	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R450	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R451	1-216-037-00	METAL GLAZE	330 5% 1/10W
R452	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R453	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R455	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R456	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R457	1-216-025-00	METAL GLAZE	100 5% 1/10W
R458	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R459	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R460	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R462	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R463	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R464	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R465	1-216-025-00	METAL GLAZE	100 5% 1/10W
R466	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R467	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R468	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R469	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R470	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R471	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R472	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R473	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R474	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R475	1-216-025-00	METAL GLAZE	100 5% 1/10W
R476	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R477	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R478	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R479	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R480	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R481	1-216-033-00	METAL GLAZE	220 5% 1/10W
R482	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R483	1-216-025-00	METAL GLAZE	100 5% 1/10W
R484	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R485	1-216-033-00	METAL GLAZE	220 5% 1/10W
R486	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R487	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R488	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R489	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R490	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R491	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R492	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R493	1-216-295-00	METAL GLAZE	0 5% 1/10W
R494	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R495	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R496	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R497	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R498	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R499	1-216-033-00	METAL GLAZE	220 5% 1/10W
R500	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R501	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R502	1-216-677-11	METAL CHIP	12K 0.50% 1/10W
R503	1-216-677-11	METAL CHIP	12K 0.50% 1/10W
R504	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R505	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R506	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R507	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R508	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R509	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R510	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R511	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R512	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R513	1-216-295-00	METAL GLAZE	0 5% 1/10W
R514	1-216-295-00	METAL GLAZE	0 5% 1/10W
R515	1-216-675-11	METAL CHIP	10K 0.50% 1/10W
R516	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R517	1-214-896-81	METAL	20K 1% 1/2W
R518	1-260-123-11	CARBON	100K 5% 1/2W
R519	1-216-017-00	METAL GLAZE	47 5% 1/10W
R520	1-249-423-11	CARBON	3.3K 5% 1/4W F
R521	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R522	1-260-111-11	CARBON	10K 5% 1/2W
R523	1-215-892-11	METAL OXIDE	1K 5% 2W F
R524	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R525	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R526	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R527	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R528	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R529	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R530	1-216-367-11	METAL OXIDE	0.68 5% 2W F
R531	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R532	1-216-478-11	METAL OXIDE	390 5% 3W F
R533	1-247-723-11	CARBON	6.8K 5% 1/4W F
R534	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R535	1-249-448-11	CARBON	1.2 5% 1/4W F
R536	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R537	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R539	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R540	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R541	1-249-383-11	CARBON	1.5 5% 1/4W F
R542	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R543	1-212-883-00	FUSIBLE	120 5% 1/4W F
R544	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R545	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R546	1-249-425-11	CARBON	4.7K 5% 1/4W F
R547	1-249-438-11	CARBON	56K 5% 1/4W
R548	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R549	1-216-677-11	METAL CHIP	12K 0.50% 1/10W
R550	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R551	1-216-077-00	METAL GLAZE	15K 5% 1/10W

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R552	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1125	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R553	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1126	1-216-041-00	METAL GLAZE	470 5% 1/10W
R554	1-216-095-00	METAL GLAZE	82K 5% 1/10W	R1127	1-216-295-00	METAL GLAZE	0 5% 1/10W
R555	1-216-692-11	METAL CHIP	51K 0.50% 1/10W	R1128	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R556	1-216-464-11	METAL OXIDE	18K 5% 2W F	R1129	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R558	1-247-711-11	CARBON	680 5% 1/4W F	R1130	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R559	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R1131	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R560	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R1132	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R561	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1133	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R562	1-247-692-11	CARBON	22 5% 1/4W F	R1134	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R563	1-216-017-00	METAL GLAZE	47 5% 1/10W	R1135	1-216-295-00	METAL GLAZE	0 5% 1/10W
R564	1-216-107-00	METAL GLAZE	270K 5% 1/10W	R1136	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R565	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1137	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R566	1-216-685-11	METAL CHIP	27K 0.50% 1/10W	R1138	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R567	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1139	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R568	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1140	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R569	1-260-119-11	CARBON	47K 5% 1/2W	R1141	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R571	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1142	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R572	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R1143	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R573	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R1144	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R574	1-216-689-11	METAL GLAZE	39K 5% 1/10W	R1145	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R576	1-216-101-00	METAL GLAZE	150K 5% 1/10W	R1146	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R578	1-216-693-11	METAL CHIP	56K 0.50% 1/10W	R1147	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R580	1-216-105-00	METAL GLAZE	220K 5% 1/10W	R1148	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R582	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1150	1-216-037-00	METAL GLAZE	330 5% 1/10W
R583	1-216-039-00	METAL GLAZE	390 5% 1/10W	R1151	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R584	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1155	1-216-133-00	METAL GLAZE	3.3M 5% 1/10W
R585	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1161	1-218-776-11	METAL CHIP	1M 0.50% 1/10W
R586	1-216-686-11	METAL CHIP	30K 0.50% 1/10W	R1162	1-218-768-11	METAL CHIP	470K 0.50% 1/10W
R587	1-216-675-11	METAL CHIP	10K 0.50% 1/10W	R1163	1-216-033-00	METAL GLAZE	220 5% 1/10W
R588	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R1164	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R589	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R1165	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R590	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1166	1-216-295-00	METAL GLAZE	0 5% 1/10W
R591	1-216-683-11	METAL CHIP	22K 0.50% 1/10W	R1167	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R592	1-247-688-11	CARBON	10 5% 1/4W F	R1168	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R593	1-216-647-11	METAL CHIP	680 0.50% 1/10W	R1169	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R594	1-260-104-91	CARBON	2.7K 5% 1/2W	R1170	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R595	1-216-689-11	METAL GLAZE	39K 5% 1/10W	R1171	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R596	1-214-754-00	METAL	11K 1% 1/4W	R1172	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R597	1-249-417-11	CARBON	1K 5% 1/4W F	R1173	1-216-295-00	METAL GLAZE	0 5% 1/10W
R598	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1176	1-216-295-00	METAL GLAZE	0 5% 1/10W
R599	1-216-645-11	METAL CHIP	560 0.50% 1/10W	R1177	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1101	1-216-295-00	METAL GLAZE	0 5% 1/10W	R1178	1-216-295-00	METAL GLAZE	0 5% 1/10W
R1102	1-216-295-00	METAL GLAZE	0 5% 1/10W	R1179	1-216-041-00	METAL GLAZE	470 5% 1/10W
R1103	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R1180	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1104	1-216-699-11	METAL CHIP	100K 0.50% 1/10W	R1181	1-216-295-00	METAL GLAZE	0 5% 1/10W
R1105	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1182	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R1106	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1183	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1107	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R1184	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R1108	1-216-681-11	METAL CHIP	18K 0.50% 1/10W	R1185	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1109	1-216-295-00	METAL GLAZE	0 5% 1/10W	R1186	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R1110	1-216-295-00	METAL GLAZE	0 5% 1/10W	R1187	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1111	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1188	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R1112	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1189	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1113	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1190	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R1114	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1191	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1115	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1192	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W
R1116	1-216-677-11	METAL CHIP	12K 0.50% 1/10W	R1193	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1117	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R1194	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1118	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1195	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1119	1-216-694-11	METAL CHIP	62K 0.50% 1/10W	R1196	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1120	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1197	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1123	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R1198	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1124	1-216-113-00	METAL GLAZE	470K 5% 1/10W				

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REF. NO.	PART NO.	DESCRIPTION	REMARK
R1301	1-216-029-00	METAL GLAZE	150 5% 1/10W
R1302	1-216-029-00	METAL GLAZE	150 5% 1/10W
R1303	1-216-039-00	METAL GLAZE	390 5% 1/10W
R1304	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R1305	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1306	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R1307	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R1308	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R1309	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1310	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1311	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1312	1-216-027-00	METAL GLAZE	120 5% 1/10W
R1313	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R1314	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1315	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1316	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1317	1-216-041-00	METAL GLAZE	470 5% 1/10W
R1318	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R1319	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1320	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1321	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R1322	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R1324	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R1325	1-216-652-11	METAL CHIP	1.1K 0.50% 1/10W
R1326	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1327	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1328	1-216-125-00	METAL GLAZE	1.5M 5% 1/10W
R1329	1-216-103-91	METAL GLAZE	180K 5% 1/10W
R1330	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1331	1-216-679-11	METAL CHIP	15K 0.50% 1/10W
R1332	1-216-671-11	METAL CHIP	6.8K 0.50% 1/10W
R1333	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R1334	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R1335	1-249-401-11	CARBON	47 5% 1/4W F
R1336	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R1337	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R1338	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R1339	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1340	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1341	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1342	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R1343	1-216-037-00	METAL GLAZE	330 5% 1/10W
R1344	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R1345	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R1346	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R1347	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1348	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1349	1-216-035-00	METAL GLAZE	270 5% 1/10W
R1350	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1351	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1352	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1353	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1354	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1355	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1356	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R1357	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R1358	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1359	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R1360	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1361	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1362	1-216-676-11	METAL CHIP	11K 0.50% 1/10W
R1363	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1364	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1365	1-216-131-11	METAL GLAZE	2.7M 5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R1366	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1367	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R1368	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R1369	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R1370	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R1371	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1372	1-249-437-11	CARBON	47K 5% 1/4W
R1373	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R1374	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R1375	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R1376	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R1377	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R1378	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1379	1-216-037-00	METAL GLAZE	330 5% 1/10W
R1380	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R1381	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R1382	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1383	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R1384	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R1385	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1386	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R1387	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R1388	1-216-689-11	METAL CHIP	39K 0.50% 1/10W
R1389	1-216-657-11	METAL CHIP	1.8K 0.50% 1/10W
R1390	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R1391	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1392	1-216-041-00	METAL GLAZE	470 5% 1/10W
R1393	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R1394	1-216-041-00	METAL GLAZE	470 5% 1/10W
R1395	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1396	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1397	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1399	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1401	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1402	1-216-295-00	METAL GLAZE	0 5% 1/10W
R1403	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R1404	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R1405	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1406	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R1407	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R1408	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1409	1-216-295-00	METAL GLAZE	0 5% 1/10W
R1410	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R1411	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1412	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R1413	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1414	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R1415	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R1416	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1417	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1418	1-216-033-00	METAL GLAZE	220 5% 1/10W
R1419	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1420	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1421	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R1422	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R1423	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R1424	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1425	1-216-013-00	METAL GLAZE	33 5% 1/10W
R1426	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1427	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R1428	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R1429	1-216-668-11	METAL CHIP	5.1K 0.50% 1/10W
R1430	1-216-073-00	METAL GLAZE	10K 5% 1/10W

The components identified by shading and mark **A** are critical for safety.  
Replace only with part number specified.

- The components identified by **A** in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

**PVM-2054QM**

**A**

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R1431	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W	R1495	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1432	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1497	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R1433	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1498	1-247-839-31	CARBON	2.2K 5% 1/4W
R1434	1-216-645-11	METAL CHIP	560 0.50% 1/10W	R1499	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R1435	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R1500	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R1436	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1501	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1437	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R1502	1-260-105-11	CARBON	3.3K 5% 1/2W
R1438	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1503	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R1439	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R1504	1-216-686-11	METAL CHIP	30K 0.50% 1/10W
R1440	1-216-041-00	METAL GLAZE	470 5% 1/10W	R1505	1-247-688-11	CARBON	10 5% 1/4W F
R1441	1-216-033-00	METAL GLAZE	220 5% 1/10W	R1506	1-216-041-00	METAL GLAZE	470 5% 1/10W
R1442	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1507	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1443	1-216-013-00	METAL GLAZE	33 5% 1/10W	R1508	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R1444	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1509	1-249-439-11	CARBON	68K 5% 1/4W
R1445	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R1510	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R1446	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R1511	1-216-360-11	METAL OXIDE	8.2 5% 1W F
R1447	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1512	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R1448	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1513	1-247-752-11	CARBON	1K 5% 1/2W F
R1449	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1514	1-247-711-11	CARBON	680 5% 1/4W F
R1450	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W	R1515	1-216-350-11	METAL OXIDE	1.2 5% 1W F
R1451	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R1516	1-247-883-00	CARBON	150K 5% 1/4W
R1452	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1518	1-215-867-00	METAL OXIDE	470 5% 1W F
R1453	1-216-013-00	METAL GLAZE	33 5% 1/10W	R1519	1-216-355-11	METAL OXIDE	3.3 5% 1W F
R1454	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R1520	1-216-007-00	METAL GLAZE	18 5% 1/10W
R1455	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1521	1-216-029-00	METAL GLAZE	150 5% 1/10W
R1456	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W	R1522	1-249-399-11	CARBON	33 5% 1/4W F
R1457	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1523	1-216-350-11	METAL OXIDE	1.2 5% 1W F
R1458	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1524	1-216-427-00	METAL OXIDE	120 5% 1W F
R1459	1-216-133-00	METAL GLAZE	3.3M 5% 1/10W	R1525	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R1460	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1526	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1461	1-216-645-11	METAL CHIP	560 0.50% 1/10W	R1527	1-249-413-11	CARBON	470 5% 1/4W F
R1462	1-216-645-11	METAL CHIP	560 0.50% 1/10W	R1528	1-215-869-11	METAL OXIDE	1K 5% 1W F
R1463	1-216-645-11	METAL CHIP	560 0.50% 1/10W	R1529	1-202-829-11	SOLID	8.2K 20% 1/2W
R1464	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1530	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R1465	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R1531	1-247-697-11	CARBON	56 5% 1/4W F
R1466	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R1532	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R1467	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R1533	1-249-414-11	CARBON	560 5% 1/4W F
R1468	1-249-438-11	CARBON	56K 5% 1/4W	R1534	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W
R1469	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1535 <b>A</b>			
R1470	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R1536 <b>A</b>			
R1471	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R1537	1-249-389-11	CARBON	4.7 5% 1/4W F
R1472	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R1538	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1473	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1539	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R1474	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	R1540	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R1475	1-216-677-11	METAL CHIP	12K 0.50% 1/10W	R1541	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1476	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W	R1542	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R1477	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R1543	1-216-027-00	METAL GLAZE	120 5% 1/10W
R1478	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R1544	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R1479	1-216-295-00	METAL GLAZE	0 5% 1/10W	R1545	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R1480	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1547	1-216-393-00	METAL OXIDE	2.2 5% 3W F
R1481	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R1548	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R1482	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1549	1-260-094-11	CARBON	390 5% 1/2W
R1483	1-216-089-91	METAL GLAZE	47K 5% 1/10W	R1550	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R1484	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1551	1-249-393-11	CARBON	10 5% 1/4W F
R1485	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1552	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R1486	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R1553	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R1487	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R1554	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R1488	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1555	1-216-295-00	METAL GLAZE	0 5% 1/10W
R1489	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R1556	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R1490	1-216-035-00	METAL GLAZE	270 5% 1/10W	R1557	1-218-760-11	METAL CHIP	220K 0.50% 1/10W
R1491	1-216-035-00	METAL GLAZE	270 5% 1/10W	R1558	1-249-393-11	CARBON	10 5% 1/4W F
R1492	1-216-035-00	METAL GLAZE	270 5% 1/10W	R1559	1-249-393-11	CARBON	10 5% 1/4W F
R1493	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R1560	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R1494	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R1561	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
				R1562	1-214-964-00	METAL	1M 1% 1/4W

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R1563	1-214-964-00	METAL CHIP	1M 1% 1/4W
R1564	1-216-681-11	METAL GLAZE	18K 0.50% 1/10W
R1567	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R1568	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R1569	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1570	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1571	1-216-103-91	METAL GLAZE	180K 5% 1/10W
R1572	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R1573	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R1574	1-216-041-00	METAL GLAZE	470 5% 1/10W
R1575	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1576	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1577	1-216-025-00	METAL GLAZE	100 5% 1/10W
R1578	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R1579	1-216-690-11	METAL CHIP	43K 0.50% 1/10W
R2300	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R2301	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R2302	1-216-671-11	METAL CHIP	6.8K 0.50% 1/10W
R2303	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R2304	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R2305	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R2306	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2307	1-216-033-00	METAL GLAZE	220 5% 1/10W
R2308	1-216-103-91	METAL GLAZE	180K 5% 1/10W
R2309	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2310	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R2311	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2312	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R2313	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2314	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R2315	1-216-679-11	METAL CHIP	15K 0.50% 1/10W
R2316	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R2317	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2318	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R2319	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R2320	1-216-677-11	METAL CHIP	12K 0.50% 1/10W
R2321	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R2322	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R2323	1-216-683-11	METAL CHIP	22K 0.50% 1/10W
R2324	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2325	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R2326	1-216-041-00	METAL GLAZE	470 5% 1/10W
R2327	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R2328	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2329	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R2330	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2331	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R2332	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2333	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2334	1-216-041-00	METAL GLAZE	470 5% 1/10W
R2335	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R2336	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R2337	1-216-037-00	METAL GLAZE	330 5% 1/10W
R2338	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2339	1-216-037-00	METAL GLAZE	330 5% 1/10W
R2340	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2341	1-216-037-00	METAL GLAZE	330 5% 1/10W
R2342	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R2343	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R2344	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R2345	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R2346	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R2347	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R2348	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R2349	1-216-679-11	METAL CHIP	15K 0.50% 1/10W
R2350	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R2351	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R2352	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R2353	1-216-041-00	METAL GLAZE	470 5% 1/10W
R2354	1-216-025-00	METAL GLAZE	100 5% 1/10W
R2356	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2358	1-216-025-00	METAL GLAZE	100 5% 1/10W
R2361	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R2362	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R2363	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R2364	1-216-025-00	METAL GLAZE	100 5% 1/10W
R2365	1-216-687-11	METAL CHIP	33K 0.50% 1/10W
R2366	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R2367	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R2368	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R2369	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2370	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R2371	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R2372	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R2374	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R2375	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2376	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2377	1-216-033-00	METAL GLAZE	220 5% 1/10W
R2378	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2379	1-216-033-00	METAL GLAZE	220 5% 1/10W
R2380	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2381	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2382	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R2383	1-216-033-00	METAL GLAZE	220 5% 1/10W
R2384	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R2385	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2386	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2387	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2388	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2389	1-216-033-00	METAL GLAZE	220 5% 1/10W
R2390	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R2391	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R2392	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2393	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2394	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R2396	1-216-041-00	METAL GLAZE	470 5% 1/10W
R2397	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R2398	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R2399	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R2501	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R2502	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R2551	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R2552	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R2553	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R2555	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R2556	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R2557	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R2558	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R2559	1-216-039-00	METAL GLAZE	390 5% 1/10W
R2560	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R2561	1-216-001-00	METAL GLAZE	10 5% 1/10W
R2562	1-216-001-00	METAL GLAZE	10 5% 1/10W
R2563	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R3301	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R3302	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R3303	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R3304	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

PVM-2054QM

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REF. NO.	PART NO.	DESCRIPTION	REMARK
R3305	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R3306	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R3307	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R3308	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R3309	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R3310	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R3311	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R3312	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R3317	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R3320	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R3333	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R3334	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R3335	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R3337	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R3338	1-218-759-11	METAL CHIP	200K 0.50% 1/10W
R3339	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R3340	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R3341	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R3342	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R3343	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R3344	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R3345	1-216-033-00	METAL GLAZE	220 5% 1/10W
R3346	1-216-025-00	METAL GLAZE	100 5% 1/10W
R3347	1-216-025-00	METAL GLAZE	100 5% 1/10W
R3348	1-216-025-00	METAL GLAZE	100 5% 1/10W
R3349	1-216-025-00	METAL GLAZE	100 5% 1/10W
R3350	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R3351	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R3353	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R3355	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R3356	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R3357	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R3358	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R3359	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R3360	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R3361	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R3362	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R3363	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R3364	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R3366	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R3367	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R3368	1-216-041-00	METAL GLAZE	470 5% 1/10W
R3369	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R3370	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R3371	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R3372	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R3373	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R3374	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R3375	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R3376	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R3377	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R3378	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R3379	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R3381	1-216-041-00	METAL GLAZE	470 5% 1/10W
R3382	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R3383	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R3384	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R3385	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R3386	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R3390	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R3394	1-216-089-91	METAL GLAZE	47K 5% 1/10W
R3395	1-249-417-11	CARBON	1K 5% 1/4W
R3396	1-216-041-00	METAL GLAZE	470 5% 1/10W
R3397	1-216-041-00	METAL GLAZE	470 5% 1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R3398	1-216-690-11	METAL CHIP	43K 0.50% 1/10W
R4401	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R4402	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R4404	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R4405	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R4407	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R4408	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R4409	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R4410	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R4411	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R4412	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R4413	1-216-295-00	METAL GLAZE	0 5% 1/10W
R4414	1-216-295-00	METAL GLAZE	0 5% 1/10W
R4415	1-216-295-00	METAL GLAZE	0 5% 1/10W
R4416	1-216-295-00	METAL GLAZE	0 5% 1/10W
<VARIABLE RESISTOR>			
RV501	1-223-102-00	RES, ADJ, WIREWOUND 120	
<TRANSFORMER>			
T300	1-406-781-11	COIL	
T500	1-426-668-11	TRANSFORMER, FERRITE (HDT)	
T501	$\Delta$ 1-453-164-11	TRANSFORMER ASSY, FLYBACK	
T502	1-413-059-00	TRANSFORMER, FERRITE (DFT)	
T503	$\Delta$ 1-460-017-11	TRANSFORMER	
<THERMISTOR>			
TH500	1-807-970-11	THERMISTOR	
<CRYSTAL>			
X101	1-579-175-11	VIBRATOR, CERAMIC	
X300	1-577-259-11	VIBRATOR, CRYSTAL	
X301	1-527-722-00	OSCILLATOR, CRYSTAL	
*****			
*A-1316-175-A G BOARD, COMPLETE			
*****			
1-533-189-11 HOLDER, FUSE			
4-363-414-00 SPACER, MICA			
4-382-854-11 SCREW (M3X10), P, SW (+)			
<CAPACITOR>			
C601	$\Delta$ 1-161-953-71	CERAMIC	0.0047MF 20% 400V
C602	$\Delta$ 1-161-953-71	CERAMIC	0.0047MF 20% 400V
C603	$\Delta$ 1-161-953-71	CERAMIC	0.0047MF 20% 400V
C604	$\Delta$ 1-161-953-71	CERAMIC	0.0047MF 20% 400V
C605	$\Delta$ 1-104-706-51	FILM	0.22MF 20% 250V
C606	1-124-907-11	ELECT	10MF 20% 50V
C607	1-124-798-11	ELECT	1MF 20% 160V
C608	1-129-765-00	FILM	0.047MF 10% 200V
C609	1-124-126-00	ELECT	47MF 20% 10V
C610	1-124-902-00	ELECT	0.47MF 20% 50V
C611	1-130-729-00	FILM	0.0027MF 5% 50V
C612	1-107-722-11	ELECT	470MF 20% 400V
C613	$\Delta$ 1-104-706-51	FILM	0.22MF 20% 250V
C614	1-102-978-00	CERAMIC	220PF 5% 50V
C615	$\Delta$ 1-104-706-51	FILM	0.22MF 20% 250V
C616	1-162-318-11	CERAMIC	0.001MF 10% 500V

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The components identified by shading and mark  $\Delta$  are critical for safety.  
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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C618	1-124-907-11	ELECT 10MF 20%	50V	D615	8-719-300-33	DIODE RU-3AM	
C619	1-162-116-00	CERAMIC 680PF 10%	2KV	D616	8-719-911-19	DIODE 1SS119	
C620	1-162-116-00	CERAMIC 680PF 10%	2KV	D617	8-719-911-19	DIODE 1SS119	
C621	1-136-153-00	FILM 0.01MF 5%	50V	D618	8-719-908-03	DIODE GP08D	
C622	1-126-773-11	ELECT 47MF 20%	250V	D619	8-719-110-41	DIODE RD15ESB2	
C623	1-162-318-11	CERAMIC 0.001MF 10%	500V	D620	8-719-045-48	DIODE FML-G12S	
C624	1-124-477-11	ELECT 47MF 20%	16V	D621	8-719-911-19	DIODE 1SS119	
C625	1-161-973-00	CERAMIC 220PF 10%	400V	D622	8-719-979-58	DIODE EGP10D	
C627	1-136-066-00	FILM 0.003MF 3%	2KV	D623	8-719-045-48	DIODE FML-G12S	
C628	1-136-067-00	FILM 0.0036MF 3%	2KV	D625	8-719-016-42	DIODE MC932	
C629	1-124-887-00	CERAMIC 0.001MF 10%	3KV	D626	8-719-109-71	DIODE RD3.9ESB1	
C630	1-102-973-00	CERAMIC 100PF 5%	50V	D628	8-719-979-50	DIODE EGP30D	
C631	1-161-973-00	CERAMIC 220PF 10%	400V	D629	8-719-979-85	DIODE EGP20G	
C632	1-162-599-12	CERAMIC 0.0047MF 20%	400V	D630	8-719-911-19	DIODE 1SS119	
C633	1-162-599-12	CERAMIC 0.0047MF 20%	400V	D631	8-719-911-19	DIODE 1SS119	
C634	1-102-125-00	CERAMIC 0.0047MF 10%	50V	<FERRITE BEAD>			
C635	1-124-903-11	ELECT 1MF 20%	50V	FB601 $\Delta$	1-543-190-11	BEAD, FERRITE	
C636	1-126-801-11	ELECT 1MF 20%	50V	FB602 $\Delta$	1-543-190-11	BEAD, FERRITE	
C637	1-102-030-00	CERAMIC 330PF 10%	500V	FB603	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
C638	1-102-030-00	CERAMIC 330PF 10%	500V	FB604 $\Delta$	1-543-190-11	BEAD, FERRITE	
C639	1-104-783-51	ELECT 1000MF 20%	25V	FB605 $\Delta$	1-543-190-11	BEAD, FERRITE	
C640	1-128-386-11	ELECT 1000MF 20%	25V	<IC>			
C641	1-106-343-00	MYLAR 0.001MF 10%	100V	IC601	8-759-100-75	IC UPC1394C	
C642	1-102-030-00	CERAMIC 330PF 10%	500V	IC602	8-759-255-41	IC MM1108XS	
C643	1-104-884-11	ELECT 470MF 20%	50V	IC603	8-759-927-49	IC 1R9431	
C644	1-102-030-00	CERAMIC 330PF 10%	500V	IC604	8-759-924-12	IC LM7805CT	
C645	1-162-131-11	CERAMIC 220PF 10%	2KV	<COIL>			
C646	1-102-973-00	CERAMIC 100PF 5%	50V	L603	1-410-645-31	INDUCTOR 100UH	
C647	1-126-385-11	ELECT 390MF 20%	16V	L604	1-407-365-00	COIL, CHOK	
C649	1-126-803-11	ELECT 47MF 20%	16V	L605	1-410-645-31	INDUCTOR 100UH	
C650	1-126-103-11	ELECT 470MF 20%	16V	<PHOTO COUPLER>			
C651	1-126-101-11	ELECT 100MF 20%	16V	PH602	8-749-923-50	PHOTO COUPLER PC111YS	
C652	1-124-667-11	ELECT 10MF 20%	50V	PH606	8-749-923-50	PHOTO COUPLER PC111YS	
C653	1-136-169-00	FILM 0.22MF 5%	50V	<TRANSISTOR>			
C654 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20%	400V	Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
C655 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20%	400V	Q602	8-729-119-80	TRANSISTOR 2SC2688-LK	
C656 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20%	400V	Q603	8-729-119-80	TRANSISTOR 2SC2688-LK	
C657	1-102-965-00	CERAMIC 39PF 5%	50V	Q605	8-729-119-80	TRANSISTOR 2SC2688-LK	
C658 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20%	400V	Q606	8-729-802-14	TRANSISTOR 2SC3460	
C659	1-102-123-00	CERAMIC 0.0033MF 10%	50V	Q607	8-729-140-96	TRANSISTOR 2SD774-34	
C660	1-124-791-11	ELECT 1MF 20%	100V	Q609	8-729-905-67	TRANSISTOR 2SD1944-K	
C661	1-130-467-00	MYLAR 470PF 5%	50V	Q610	8-729-209-03	TRANSISTOR 2SC2551-RO	
<CONNECTOR>				Q611	8-729-200-17	TRANSISTOR 2SA1091-0	
CN601	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P		<RESISTOR>			
CN602	*1-695-561-11	PIN, CONNECTOR (PC BOARD) 7P		R601 $\Delta$	1-260-123-91	CARBON 100K 5% 1/2W	
CN603	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P		R602 $\Delta$	1-260-123-91	CARBON 100K 5% 1/2W	
CN605	*1-573-964-11	PIN, CONNECTOR (PC BOARD) 6P		R603	1-249-427-11	CARBON 6.8K 5% 1/4W	
CN606	*1-564-508-11	PLUG, CONNECTOR 5P		R604 $\Delta$	1-214-937-55	METAL 1M 1% 1/2W	
CN609	*1-506-371-00	PIN, CONNECTOR 2P		R605	1-249-434-11	CARBON 27K 5% 1/4W	
<DIODE>				R606	1-260-111-11	CARBON 10K 5% 1/2W	
D601 $\Delta$	8-719-510-53	DIODE D4SB60L		R607	1-205-943-11	WIREWOUND 1 5% 20W	
D602	8-719-300-33	DIODE RU-3AM		R608	1-260-127-11	CARBON 220K 5% 1/2W	
D603	8-719-110-90	DIODE RD39ESB4		R609	1-215-922-11	METAL OXIDE 6.8K 5% 3W	F
D604	8-719-110-90	DIODE RD39ESB4					
D605	8-719-109-97	DIODE RD6.8ESB2					
D606	8-719-118-34	DIODE RD110EB					
D607	8-719-110-41	DIODE RD15ESB2					
D608	8-719-300-33	DIODE RU-3AM					
D610	8-719-200-02	DIODE 10E-2					
D611	8-719-300-33	DIODE RU-3AM					

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

• \* : Selected to yield optimum performance.



REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R610	1-215-922-11	METAL OXIDE	6.8K 5% 3W F	*R690	1-214-127-00	METAL	620 1% 1/4W
R611	1-215-457-00	METAL	33K 1% 1/4W	*R690	1-214-725-00	METAL	680 1% 1/4W
R612	1-202-719-00	SOLID	1M 20% 1/2W	*R690	1-215-418-00	METAL	750 1% 1/4W
R613	1-202-720-00	SOLID	1.2M 20% 1/2W	*R690	1-214-727-00	METAL	820 1% 1/4W
R614	1-249-423-11	CARBON	3.3K 5% 1/4W	*R690	1-214-728-11	METAL	910 1% 1/4W
R615	1-260-324-11	CARBON	470 5% 1/2W	*R690	1-214-729-00	METAL	1K 1% 1/4W
R616	1-247-710-11	CARBON	560 5% 1/4W F	*R690	1-214-730-00	METAL	1.1K 1% 1/4W
R617	1-214-716-00	METAL	300 1% 1/4W	*R690	1-214-731-00	METAL	1.2K 1% 1/4W
R618	1-249-496-11	CARBON	100K 5% 1/2W F	*R690	1-214-732-00	METAL	1.3K 1% 1/4W
R619	1-216-444-11	METAL OXIDE	82K 5% 1W F	*R690	1-214-733-00	METAL	1.5K 1% 1/4W
R620	1-216-444-11	METAL OXIDE	82K 5% 1W F	*R690	1-215-426-00	METAL	1.6K 1% 1/4W
R621	1-249-427-11	CARBON	6.8K 5% 1/4W	*R690	1-214-735-00	METAL	1.8K 1% 1/4W
R622	1-217-190-21	WIREWOUND	0.15 10% 2W F	*R690	1-215-428-00	METAL	2K 1% 1/4W
R623	1-249-393-11	CARBON	10 5% 1/4W	*R690	1-214-737-00	METAL	2.2K 1% 1/4W
R624	1-247-887-00	CARBON	220K 5% 1/4W	*R690	1-214-739-00	METAL	2.7K 1% 1/4W
R625	1-247-887-00	CARBON	220K 5% 1/4W	*R690	1-214-741-00	METAL	3.3K 1% 1/4W
R626	1-249-436-11	CARBON	39K 5% 1/4W	*R690	1-214-743-00	METAL	3.9K 1% 1/4W
R627	1-249-429-11	CARBON	10K 5% 1/4W	*R690	1-214-745-00	METAL	4.7K 1% 1/4W
R628	1-214-777-00	METAL	100K 1% 1/4W	*R690	1-214-747-00	METAL	5.6K 1% 1/4W
R629	1-247-891-00	CARBON	330K 5% 1/4W	*R690	1-214-749-00	METAL	6.8K 1% 1/4W
R630	1-249-424-11	CARBON	3.9K 5% 1/4W	<VARIABLE RESISTOR>			
R631	1-249-429-11	CARBON	10K 5% 1/4W	RV601	1-241-759-21	RES, ADJ, CARBON 220	
R632	1-247-885-00	CARBON	180K 5% 1/4W	<RELAY>			
R633	1-249-412-11	CARBON	390 5% 1/4W	RY601A	1-515-601-11	RELAY	
R635	1-249-441-11	CARBON	100K 5% 1/4W	<TRANSFORMER>			
R636	1-247-753-11	CARBON	1.2K 5% 1/2W F	T601 A	1-426-716-11	TRANSFORMER, LINE FILTER (LFT)	
R637	1-216-491-11	METAL OXIDE	56K 5% 3W F	T602 A	1-426-716-11	TRANSFORMER, LINE FILTER (LFT)	
R638	1-216-491-11	METAL OXIDE	56K 5% 3W F	T603	1-437-090-00	HDT	
R642	1-247-807-31	CARBON	100 5% 1/4W	T604	1-426-665-11	TRANSFORMER, CONVERTER (SRT)	
R643	1-249-423-11	CARBON	3.3K 5% 1/4W	<THERMISTOR>			
R644	1-249-417-11	CARBON	1K 5% 1/4W	TH601	1-807-973-11	THERMISTOR	
R645	1-218-265-11	METAL GLAZE	8.2M 5% 1W	TH602	1-807-973-11	THERMISTOR	
R646	1-249-417-11	CARBON	1K 5% 1/4W	THP601A	1-808-059-32	THERMISTOR, POSITIVE	
R647	1-260-121-11	CARBON	68K 5% 1/2W F	*****			
R648	1-249-443-11	CARBON	0.47 5% 1/4W	*A-1331-300-A	C BOARD, COMPLETE		
R649	1-260-097-11	CARBON	680 5% 1/2W	*****			
R650	1-249-422-11	CARBON	2.7K 5% 1/4W	*4-379-160-01	COVER (REAR LID), CV		
R652	1-247-895-00	CARBON	470K 5% 1/4W	*4-379-167-01	COVER (MAIN), CV		
R653	1-260-124-11	CARBON	120K 5% 1/2W	<CAPACITOR>			
R654	1-215-924-00	METAL OXIDE	15K 5% 3W F	C701	1-102-116-00	CERAMIC	680PF 10% 50V
R655	1-249-440-11	CARBON	82K 5% 1/4W	C702	1-102-116-00	CERAMIC	680PF 10% 50V
R656	1-247-883-00	CARBON	150K 5% 1/4W	C703	1-102-116-00	CERAMIC	680PF 10% 50V
R659	1-249-443-11	CARBON	0.47 5% 1/4W F	C704	1-102-121-00	CERAMIC	0.0022MF 10% 50V
R660	1-215-427-00	METAL	1.8K 1% 1/4W	C705	1-126-101-11	ELECT	100MF 20% 16V
R661	1-215-412-00	METAL	430 1% 1/4W	C706	1-102-074-00	CERAMIC	0.001MF 10% 50V
R662	1-260-123-11	CARBON	100K 5% 1/2W	C707	1-162-116-00	CERAMIC	680PF 10% 2KV
R663	1-260-089-11	CARBON	150 5% 1/2W	C708	1-136-601-11	FILM	0.01MF 10% 630V
R664	1-216-390-11	METAL OXIDE	1.2 5% 3W F	C710	1-101-880-00	CERAMIC	47PF 5% 50V
R665	1-216-390-11	METAL OXIDE	1.2 5% 3W F	C711	1-101-880-00	CERAMIC	47PF 5% 50V
R666	1-216-369-00	METAL OXIDE	1 5% 2W F	C712	1-101-880-00	CERAMIC	47PF 5% 50V
R667	1-205-943-11	WIREWOUND	1 5% 20W	C714	1-102-976-00	CERAMIC	180PF 5% 50V
R669	1-215-419-00	METAL	820 1% 1/4W	C715	1-102-976-00	CERAMIC	180PF 5% 50V
R670	1-249-435-11	CARBON	33K 5% 1/4W				
R671	1-249-429-11	CARBON	10K 5% 1/4W				
R672	1-215-469-00	METAL	100K 1% 1/4W				
R673	1-249-437-11	CARBON	47K 5% 1/4W				
R674	1-247-889-00	CARBON	270K 5% 1/4W				
R675	1-249-429-11	CARBON	10K 5% 1/4W				
R676	1-247-883-00	CARBON	150K 5% 1/4W				
R677	1-260-120-11	CARBON	56K 5% 1/2W				
R678	1-249-436-11	CARBON	39K 5% 1/4W				
*R690	1-214-721-00	METAL	470 1% 1/4W				
*R690	1-215-414-00	METAL	510 1% 1/4W				
*R690	1-214-723-00	METAL	560 1% 1/4W				



The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C716	1-102-976-00	CERAMIC 180PF	5% 50V	R702	1-247-897-11	CARBON 560K	5% 1/4W
C722	1-162-622-11	CERAMIC 330PF	10% 6.3KV	R704	1-215-404-00	METAL 200	1% 1/4W
C724	1-124-667-11	ELECT 10MF	20% 100V	R705	1-215-404-00	METAL 200	1% 1/4W
C726	1-123-948-00	ELECT 22MF	20% 250V	R706	1-215-404-00	METAL 200	1% 1/4W
C733	1-123-947-00	ELECT 10MF	20% 250V	R707	1-249-429-11	CARBON 10K	5% 1/4W
C734	1-101-888-00	CERAMIC 68PF	5% 50V	R708	1-249-429-11	CARBON 10K	5% 1/4W
C737	1-102-934-00	CERAMIC 1PF	0.25PF 50V	R709	1-249-429-11	CARBON 10K	5% 1/4W
<CONNECTOR>				R710	1-215-388-00	METAL 43	1% 1/4W
CN701	*1-564-511-11	PLUG, CONNECTOR 8P		R711	1-215-390-00	METAL 51	1% 1/4W
CN702	*1-573-964-11	PIN, CONNECTOR (PC BOARD) 6P		R712	1-215-388-00	METAL 43	1% 1/4W
CN703	*1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P		R715	1-202-818-00	SOLID 1K	20% 1/2W
<DIODE>				R716	1-216-486-00	METAL OXIDE 8.2K	5% 3W F
D701	8-719-911-19	DIODE 1SS119		R717	1-202-818-00	SOLID 1K	20% 1/2W
D702	8-719-911-19	DIODE 1SS119		R718	1-216-486-00	METAL OXIDE 8.2K	5% 3W F
D703	8-719-911-19	DIODE 1SS119		R719	1-202-818-00	SOLID 1K	20% 1/2W
D704	8-719-911-19	DIODE 1SS119		R720	1-216-486-00	METAL OXIDE 8.2K	5% 3W F
D705	8-719-911-19	DIODE 1SS119		R722	1-202-883-11	SOLID 680K	20% 1/2W
D706	8-719-911-19	DIODE 1SS119		R723	1-202-838-00	SOLID 100K	20% 1/2W
D707	8-719-901-83	DIODE 1SS83		R724	1-202-842-11	SOLID 220K	20% 1/2W
D708	8-719-901-83	DIODE 1SS83		R725	1-202-838-00	SOLID 100K	20% 1/2W
D709	8-719-901-83	DIODE 1SS83		R726	1-202-846-00	SOLID 470K	20% 1/2W
D713	8-719-901-83	DIODE 1SS83		R727	1-202-842-11	SOLID 220K	20% 1/2W
D715	8-719-901-83	DIODE 1SS83		R728	1-202-837-00	SOLID 82K	20% 1/2W
D716	8-719-901-83	DIODE 1SS83		R729	1-202-549-00	SOLID 100	20% 1/2W
D717	8-719-901-83	DIODE 1SS83		R730	1-202-842-11	SOLID 220K	20% 1/2W
<JACK>				R731	1-249-409-11	CARBON 220	5% 1/4W
J701	$\Delta$ 1-526-798-29	SOCKET, PICTURE TUBE		R732	1-249-409-11	CARBON 220	5% 1/4W
<COIL>				R733	1-249-409-11	CARBON 220	5% 1/4W
L702	1-408-413-00	INDUCTOR 22UH		R734	1-249-409-11	CARBON 220	5% 1/4W F
L703	1-408-414-00	INDUCTOR 27UH		R735	1-249-409-11	CARBON 220	5% 1/4W F
L704	1-408-414-00	INDUCTOR 27UH		R736	1-249-409-11	CARBON 220	5% 1/4W F
L705	1-412-530-31	INDUCTOR 27UH		R737	1-247-807-31	CARBON 100	5% 1/4W
L706	1-410-667-31	INDUCTOR 22UH		R738	1-247-807-31	CARBON 100	5% 1/4W
<TRANSISTOR>				R739	1-247-807-31	CARBON 100	5% 1/4W
Q701	8-729-119-78	TRANSISTOR 2SC2785-HFE		R740	1-249-433-11	CARBON 22K	5% 1/4W F
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE		R741	1-249-433-11	CARBON 22K	5% 1/4W F
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE		R742	1-249-433-11	CARBON 22K	5% 1/4W F
Q704	8-729-200-17	TRANSISTOR 2SA1091-0		R744	1-249-423-11	CARBON 3.3K	5% 1/4W
Q705	8-729-200-17	TRANSISTOR 2SA1091-0		R745	1-249-429-11	CARBON 10K	5% 1/4W
Q706	8-729-200-17	TRANSISTOR 2SA1091-0		R746	1-215-879-11	METAL OXIDE 47K	5% 1W F
Q707	8-729-326-11	TRANSISTOR 2SC2611		R747	1-247-725-11	CARBON 10K	5% 1/4W F
Q708	8-729-326-11	TRANSISTOR 2SC2611		R748	1-247-713-11	CARBON 1K	5% 1/4W F
Q709	8-729-326-11	TRANSISTOR 2SC2611		R749	1-215-902-11	METAL OXIDE 47K	5% 2W F
Q710	8-729-200-17	TRANSISTOR 2SA1091-0		R751	1-247-887-00	CARBON 220K	5% 1/4W
Q711	8-729-200-17	TRANSISTOR 2SA1091-0		R752	1-247-887-00	CARBON 220K	5% 1/4W
Q712	8-729-200-17	TRANSISTOR 2SA1091-0		R753	1-247-887-00	CARBON 220K	5% 1/4W
Q713	8-729-255-12	TRANSISTOR 2SC2551-0		R754	1-249-433-11	CARBON 22K	5% 1/4W
Q714	8-729-255-12	TRANSISTOR 2SC2551-0		R755	1-249-434-11	CARBON 27K	5% 1/4W
Q715	8-729-255-12	TRANSISTOR 2SC2551-0		R756	1-249-440-11	CARBON 82K	5% 1/4W
Q716	8-729-255-12	TRANSISTOR 2SC2551-0		R760	1-249-400-11	CARBON 39	5% 1/4W F
Q717	8-729-255-12	TRANSISTOR 2SC2551-0		<VARIABLE RESISTOR>			
<RESISTOR>				RV708	$\Delta$ 1-230-619-11	RES, ADJ, METAL GLAZE 110M	
<CONNECTOR>				RV709	1-226-114-00	RES, ADJ, METAL GLAZE 2.2M	
				*****			
				*A-1371-971-A H BOARD, COMPLETE			
				*****			
				*4-348-208-00 HOLDER, LED			

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

PVM-2054QM

H J X

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN105	*1-564-527-11	PLUG, CONNECTOR 12P	
CN106	*1-564-526-11	PLUG, CONNECTOR 11P	
<DIODE>			
D2102	8-719-920-05	DIODE SLP281C-50	
D2103	8-719-812-32	DIODE TLY123	
D2104	8-719-901-33	DIODE ISS133	
<RESISTOR>			
R2101	1-249-419-11	CARBON 1.5K 5% 1/4W	
R2107	1-249-430-11	CARBON 12K 5% 1/4W	
R2136	1-249-414-11	CARBON 560 5% 1/4W	
R2137	1-249-414-11	CARBON 560 5% 1/4W	
R2138	1-249-414-11	CARBON 560 5% 1/4W	
R2139	1-249-414-11	CARBON 560 5% 1/4W	
R2140	1-249-414-11	CARBON 560 5% 1/4W	
R2141	1-249-414-11	CARBON 560 5% 1/4W	
R2142	1-249-414-11	CARBON 560 5% 1/4W	
R2143	1-249-414-11	CARBON 560 5% 1/4W	
R2144	1-249-414-11	CARBON 560 5% 1/4W	
R2145	1-249-414-11	CARBON 560 5% 1/4W	
R2147	1-215-427-00	METAL 1.8K 1% 1/4W	
R2148	1-215-419-00	METAL 820 1% 1/4W	
R2149	1-215-414-00	METAL 510 1% 1/4W	
R2150	1-215-409-00	METAL 330 1% 1/4W	
R2151	1-215-407-00	METAL 270 1% 1/4W	
R2152	1-215-404-00	METAL 200 1% 1/4W	
R2153	1-215-401-11	METAL 150 1% 1/4W	
R2154	1-215-399-00	METAL 120 1% 1/4W	
R2155	1-215-397-00	METAL 100 1% 1/4W	
R2156	1-215-421-00	METAL 1K 1% 1/4W	
R2157	1-215-416-00	METAL 620 1% 1/4W	
R2158	1-215-410-00	METAL 360 1% 1/4W	
R2159	1-215-405-00	METAL 220 1% 1/4W	
R2160	1-215-421-00	METAL 1K 1% 1/4W	
<VARIABLE RESISTOR>			
RV2101	1-241-846-11	RES. VAR. CARBON 20K	
RV2103	1-241-845-11	RES. VAR. CARBON 20K	
RV2105	1-241-845-11	RES. VAR. CARBON 20K	
RV2109	1-241-845-11	RES. VAR. CARBON 20K	
RV2113	1-241-845-11	RES. VAR. CARBON 20K	
RV2117	1-241-846-11	RES. VAR. CARBON 20K	
<SWITCH>			
S2101	1-570-101-41	SWITCH, KEY BOARD	
S2102	1-570-101-41	SWITCH, KEY BOARD	
S2103	1-570-101-41	SWITCH, KEY BOARD	
S2104	1-570-101-41	SWITCH, KEY BOARD	
S2105	1-570-101-41	SWITCH, KEY BOARD	
S2106	1-570-969-11	SWITCH, KEY BOARD	
S2107	1-570-969-11	SWITCH, KEY BOARD	
S2108	1-570-101-41	SWITCH, KEY BOARD	
S2109	1-570-101-41	SWITCH, KEY BOARD	
S2110	1-570-101-41	SWITCH, KEY BOARD	
S2111	1-570-101-41	SWITCH, KEY BOARD	
S2112	1-570-101-41	SWITCH, KEY BOARD	
S2113	1-570-969-11	SWITCH, KEY BOARD	
S2114	1-570-969-11	SWITCH, KEY BOARD	

REF.NO.	PART NO.	DESCRIPTION	REMARK
*****			
	*A-1388-166-A	J BOARD, COMPLETE	*****
<CONNECTOR>			
CN608	*1-695-561-11	PIN, CONNECTOR (PC BOARD) 7P	
<SWITCH>			
S601	$\Delta$ 1-692-921-11	SWITCH, PUSH (A.C. POWER)	
*****			
	*A-1390-390-A	X BOARD, COMPLETE	*****
<CONNECTOR>			
CN108	*1-564-518-11	PLUG, CONNECTOR 3P	
<DIODE>			
D001	8-719-023-78	DIODE SEL381ODLC05	
D002	8-719-023-78	DIODE SEL381ODLC05	
D003	8-719-023-78	DIODE SEL381ODLC05	
D004	8-719-023-78	DIODE SEL381ODLC05	
*****			
MISCELLANEOUS			
*****			
	$\Delta$ 1-426-505-11	COIL, DEMAGNETIZATION	
	$\Delta$ 1-451-349-11	DEFLECTION YOKE (Y20FZA)	
	1-537-735-11	TERMINAL BOARD ASSY, I/O (A)	
	1-544-063-12	SPEAKER	
	$\Delta$ 1-576-231-11	FUSE (H.B.C.) (4.0A/250V)	
V901	$\Delta$ 8-736-122-05	PICTURE TUBE (M49KGH21X)	
*****			
ACCESSORIES AND PACKING MATERIALS			
*****			
	$\Delta$ 1-590-151-11	CORD SET, POWER (10.0A/250V)	
	1-765-268-11	CORD, CONNECTION	
	3-170-078-01	HOLDER (B), PLUG	
	3-758-531-41	MANUAL, INSTRUCTION	
	*4-043-769-01	CUSHION (UPPER) (ASSY)	
	*4-043-770-01	CUSHION (LOWER) (ASSY)	
	4-044-040-01	LABEL, TALLY	
	*4-044-454-01	INDIVIDUAL CARTON	



# PVM-2054QM

**SONY**  
**SERVICE MANUAL**

V03273  
**AEP Model**  
Serial No. 2,000,501 and Higher  
Chassis No. SCC-G62A-A

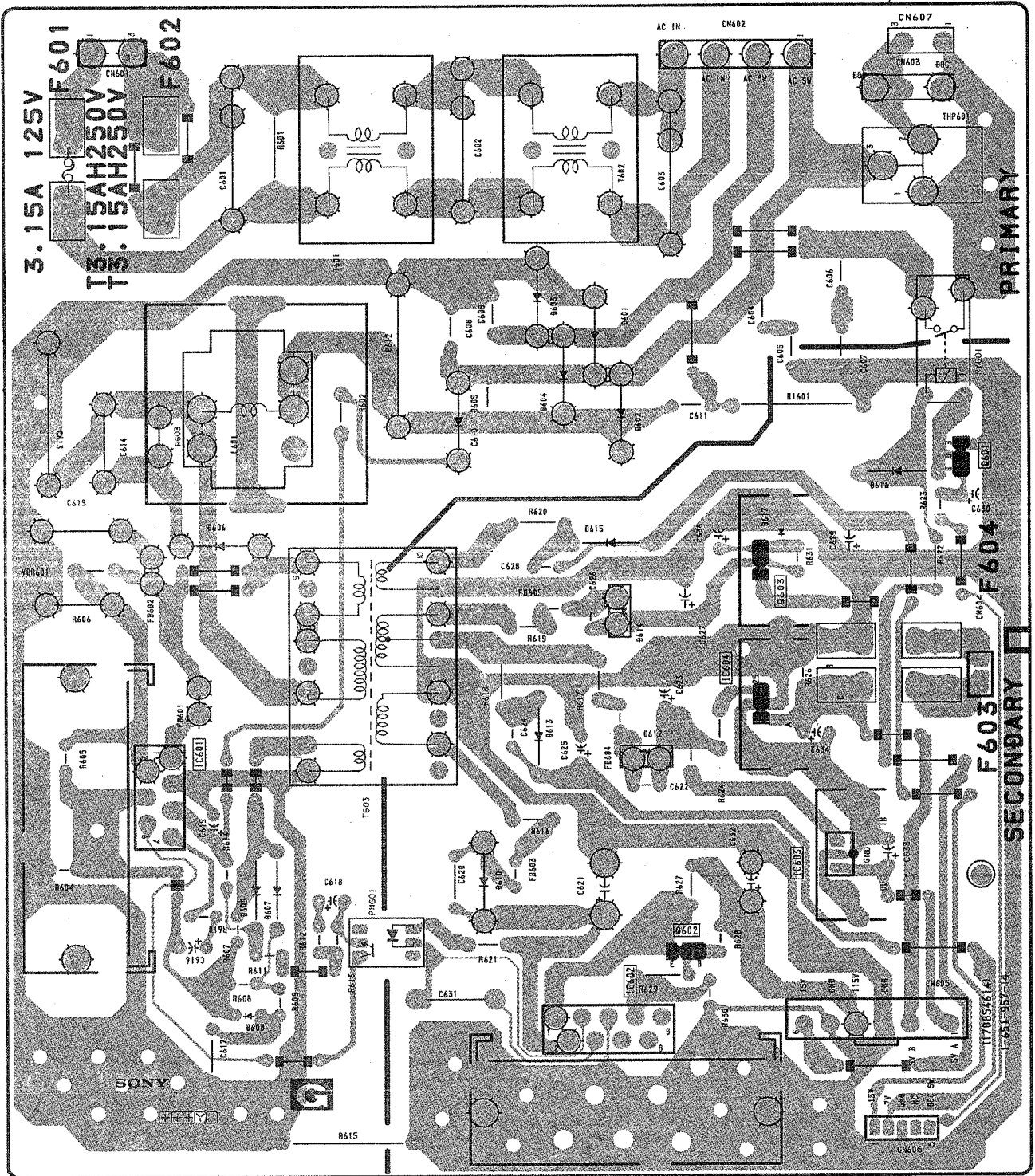
## SUPPLEMENT-1

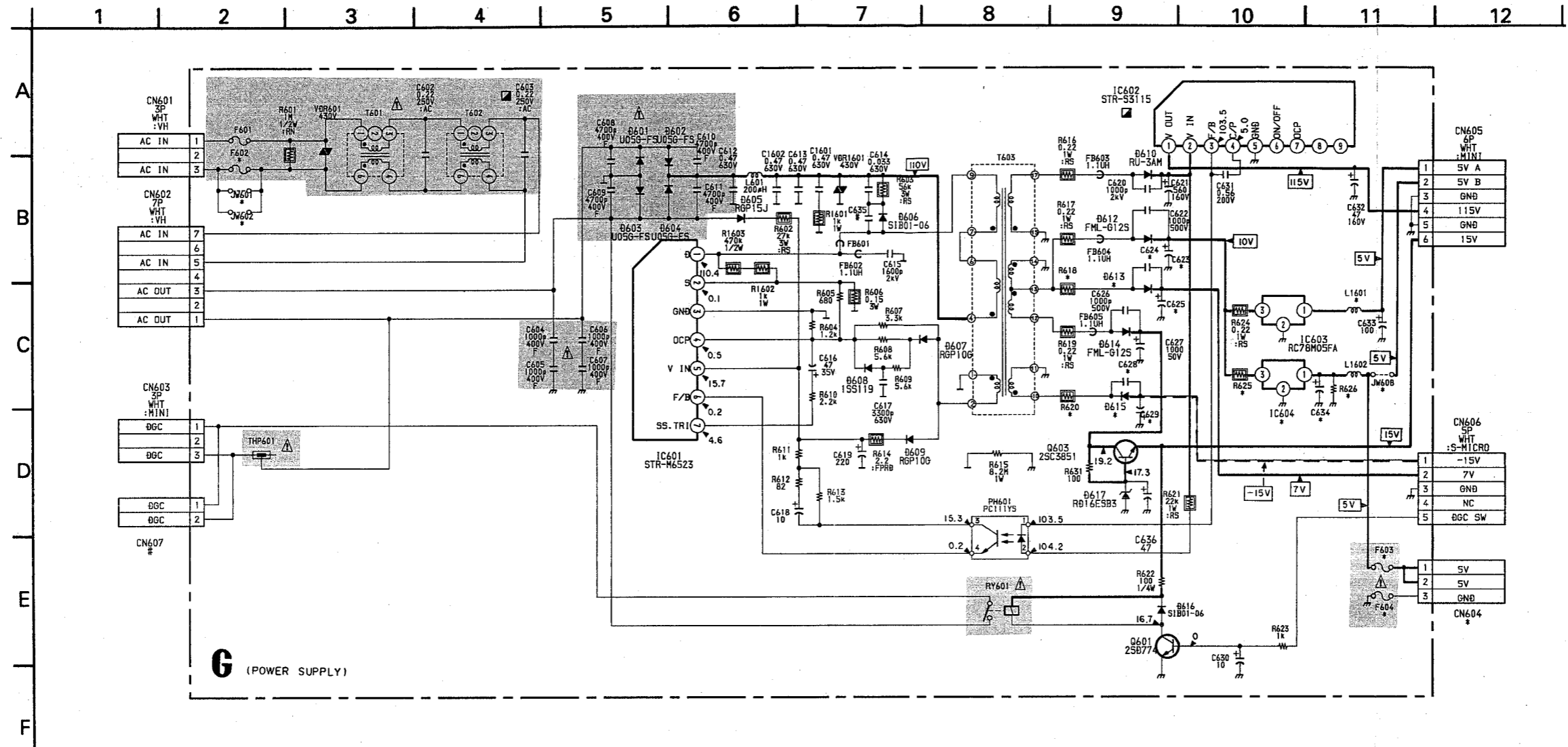
File this supplement with the service manual.

### • INTRODUCTION

Set, having CE mark (Safety mark), have been applied to the above  
Serial No. and changed G Block.  
New G Block shows on next pages.



**G****[POWER SUPPLY]****- G BOARD -**



#: not mounted

<G MOUNT DPL>

PVM-1351Q	
PVM-1354Q	
PVM-1454QM	
PVM-1454PM	
PVM-1954Q	PVM-1350
PVM-2054QM	PVM-1450QM
C624 1000p 500V	#
C625 1000 25V	#
C628 1000p 500V	#
C629 1000 50V	#
C634 220	#
CN604	#
D613 RGP15J	#
D615 RGP15J	#
F602	#
F603	#
F604	#
IC604 MCT7805CT	#
JW601 12.5MM	12.5MM
JW602 12.5MM	12.5MM
JW608 10MM	#
R618 0.47 1/4W :FPRD	#
R620 0.47 1/4W :FPRD	#
R625 0.22 1W :RS	#
R625 470k 1/4W	#

# G BOARD

IC601	REF PWM
IC602	+B CONTROL
IC603	+5V A REG
IC604	+5V B REG
Q601	RELAY DRIVE
Q603	+15V REG
D601	MAIN RECT
D602	MAIN RECT
D603	MAIN RECT
D604	MAIN RECT
D605	OVP
D606	PROTECT
D607	SWITCH
D608	SWITCH
D609	SWITCH
D610	+B RECT
D612	+12V RECT
D613	+7V RECT
D614	+15V RECT
D615	-15V RECT
D616	PROTECT
D617	REF VOLTEGE

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

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G

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1316-213-A	G BOARD, COMPLETE (PVM-1351Q)		
	***** (PVM-1354Q)		
	(PVM-1954Q)		
	(PVM-1454PM)		
	(PVM-1454QM)		
	(PVM-2054QM)		
*A-1316-214-A	G BOARD, COMPLETE (PVM-1350)		
	***** (PVM-1450QM)		
<CAPACITOR>			
C602 $\Delta$	1-136-360-51	FILM 0.22MF 20% 250V	
C603 $\Delta$	1-136-360-51	FILM 0.22MF 20% 250V	
C604 $\Delta$	1-161-741-21	CERAMIC 0.001MF 10% 400V	
C605 $\Delta$	1-161-741-21	CERAMIC 0.001MF 10% 400V	
C606 $\Delta$	1-161-741-21	CERAMIC 0.001MF 10% 400V	
C607 $\Delta$	1-161-741-21	CERAMIC 0.001MF 10% 400V	
C608 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20% 400V	
C609 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20% 400V	
C610 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20% 400V	
C611 $\Delta$	1-161-953-71	CERAMIC 0.0047MF 20% 400V	
C612 $\Delta$	1-137-484-61	FILM 0.47MF 10% 630V	
C613	1-137-484-11	FILM 0.47MF 10% 630V	
C614	1-129-720-00	FILM 0.033MF 10% 630V	
C615	1-136-619-11	FILM 0.0016MF 3% 2KV	
C616	1-124-910-11	ELECT 47MF 20% 35V	
C617	1-136-557-11	FILM 0.0033MF 10% 630V	
C618	1-126-096-11	ELECT 10MF 20% 25V	
C619	1-124-911-11	ELECT 220MF 20% 50V	
C620	1-161-754-00	CERAMIC 0.001MF 10% 2KV	
C621	1-125-494-11	ELECT (BLOCK) 560MF 20% 160V	
C622	1-102-038-00	CERAMIC 0.001MF 500V	
C623	1-126-944-11	ELECT 3300MF 20% 25V	
C624	1-102-038-00	CERAMIC 0.001MF 500V	
C625	1-124-557-11	ELECT 1000MF 20% 25V	
C626	1-102-038-00	CERAMIC 0.001MF 500V	
C627	1-124-922-11	ELECT 1000MF 20% 50V	
C628	1-102-038-00	CERAMIC 0.001MF 500V	
C629	1-124-922-11	ELECT 1000MF 20% 50V	
C630	1-124-907-11	ELECT 10MF 20% 50V	
C631	1-136-853-11	FILM 0.56MF 5% 200V	
C632	1-124-562-11	ELECT 47MF 20% 160V	
C633	1-124-122-11	ELECT 100MF 20% 50V	
C634	1-124-911-11	ELECT 220MF 20% 50V	
C636	1-124-910-11	ELECT 47MF 20% 50V	
C1602	1-137-484-11	FILM 0.47MF 10% 630V	
<CONNECTOR>			
CN601	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P	
CN602	*1-695-561-11	PIN, CONNECTOR (PC BOARD) 7P	
CN603	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN604	*1-564-506-11	PLUG, CONNECTOR 3P	
CN605	*1-573-964-11	PIN, CONNECTOR (PC BOARD) 6P	
CN606	*1-564-508-11	PLUG, CONNECTOR 5P	
<DIODE>			
D601 $\Delta$	8-719-032-39	DIODE DSA3A4-F3	
D602 $\Delta$	8-719-032-39	DIODE DSA3A4-F3	
D603 $\Delta$	8-719-032-39	DIODE DSA3A4-F3	
D604 $\Delta$	8-719-032-39	DIODE DSA3A4-F3	
D605	8-719-971-65	DIODE RGP15J-6040	

REF.NO.	PART NO.	DESCRIPTION	REMARK
D606	8-719-300-33	DIODE RU-3AM	
D607	8-719-300-33	DIODE RU-3AM	
D608	8-719-911-19	DIODE 1SS119-25	
D609	8-719-300-33	DIODE RU-3AM	
D610	8-719-300-33	DIODE RU-3AM	
D612	8-719-045-48	DIODE FML-G12S	
D613	8-719-971-65	DIODE RGP15J-6040	
D614	8-719-045-48	DIODE FML-G12S	
D615	8-719-971-65	DIODE RGP15J-6040	
D616	8-719-300-33	DIODE RU-3AM	
D617	8-719-110-46	DIODE RD16ESB3	
<FUSE>			
F603 $\Delta$	1-532-742-11	FUSE, GLASS TUBE 1.6A/125V	
	1-533-189-11	HOLDER, FUSE	
F604 $\Delta$	1-532-742-11	FUSE, GLASS TUBE 1.6A/125V	
	1-533-189-11	HOLDER, FUSE	
<FERRITE BEAD>			
FB601	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB602	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB603	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB604	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
<IC>			
IC601	8-749-924-69	IC STR-M6523	
	4-382-854-11	SCREW (M3X10), P, SW (+); IC601	
IC602	8-749-010-47	IC STR-S3115	
	4-382-854-11	SCREW (M3X10), P, SW (+); IC602	
IC603	8-759-701-56	IC NJM78M05FA	
	4-382-854-11	SCREW (M3X10), P, SW (+); IC603	
IC604	8-759-231-53	IC TA7805S	
	4-382-854-11	SCREW (M3X10), P, SW (+); IC604	
<JUMPER>			
JW609	1-410-679-31	INDUCTOR 270UH (PVM-1353MD)	
<COIL>			
L601	1-411-215-11	COIL, CHOKE 200UH	
L1601	1-410-679-31	INDUCTOR 270UH (PVM-1453MD)	
L1602	1-421-421-00	COIL, CHOKE	
<PHOTO COUPLER>			
PH601	8-749-923-50	PHOTO COUPLER PC111YS	
<TRANSISTOR>			
Q601	8-729-140-96	TRANSISTOR 2SD774-34	
Q603	8-729-303-61	TRANSISTOR 2SC3851-G	
	4-382-854-11	SCREW (M3X10), P, SW (+); Q603	
<RESISTOR>			
R601 $\Delta$	1-202-885-91	SOLID 1M 20% 1/2W	
R602	1-216-489-11	METAL OXIDE 27K 5% 3W	F

REF.NO.	PART NO.	DESCRIPTION	REMARK
R603	1-216-491-11	METAL OXIDE 56K 5% 3W	F
R604	1-249-418-11	CARBON 1.2K 5% 1/4W	
R605	1-249-415-11	CARBON 680 5% 1/4W	
R606	1-207-642-00	WIREWOUND 0.15 10% 3W	F
R607	1-249-423-11	CARBON 3.3K 5% 1/4W	
R608	1-249-426-11	CARBON 5.6K 5% 1/4W	
R609	1-249-426-11	CARBON 5.6K 5% 1/4W	
R610	1-249-421-11	CARBON 2.2K 5% 1/4W	
R611	1-249-417-11	CARBON 1K 5% 1/4W	
R612	1-249-404-00	CARBON 82 5% 1/4W	
R613	1-249-419-11	CARBON 1.5K 5% 1/4W	
R614	1-249-385-11	CARBON 2.2 5% 1/4W	F
R615	1-218-265-11	METAL 8.2M 5% 1W	
R616	1-216-341-11	METAL OXIDE 0.22 5% 1W	F
R617	1-216-341-11	METAL OXIDE 0.22 5% 1W	F
R618	1-249-443-11	CARBON 0.47 5% 1/4W	F
R619	1-216-341-11	METAL OXIDE 0.22 5% 1W	F
R620	1-249-443-11	CARBON 0.47 5% 1/4W	F
R621	1-215-877-11	METAL OXIDE 22K 5% 1W	F
R622	1-247-700-11	CARBON 100 5% 1/4W	
R623	1-249-417-11	CARBON 1K 5% 1/4W	
R624	1-216-341-11	METAL OXIDE 0.22 5% 1W	F
R625	1-216-341-11	METAL OXIDE 0.22 5% 1W	F
R626	1-247-895-00	CARBON 470K 5% 1/4W	
R631	1-247-807-31	CARBON 100 5% 1/4W	
R1602	1-215-869-11	METAL OXIDE 1K 5% 1W	F
R1603	1-202-846-00	SOLID 470K 20% 1/2W	
<RELAY>			
RY601 $\Delta$	1-515-738-11	RELAY	
<TRANSFORMER>			
T601 $\Delta$	1-426-716-11	TRANSFORMER, LINE FILTER (LFT)	
T602 $\Delta$	1-426-716-11	TRANSFORMER, LINE FILTER (LFT)	
T603	1-427-885-11	TRANSFORMER, CONVERTER (SRT)	
<THERMISTOR>			
THP601 $\Delta$	1-808-059-32	THERMISTOR, POSITIVE	
<VARISTOR>			
VDR601 $\Delta$	1-809-942-71	VARISTOR	
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